Flinders University

Flinders Human Behaviour

& Health Research Unit

Title: Ambulance Employees Association – Scoping Literature Reviews drawing on qualitative literature to address the physical, psychological, psychobiological, and psychosocial health of operational ambulance staff and interventions to address the impact of workplace stressors.

April 2019

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Our Research Unit's vision is 'Transforming health through connected communities'.

ACKNOWLEDGEMENTS

The research team would like to acknowledge those who provided submissions to the Senate Inquiry into the mental health of emergency service workers as well as those who were contacted and generously provided information regarding the current research in this area.

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ISBN 978-0-9943050-5-3

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ABBREVIATIONS

AEASA	Ambulance Employees Association of South Australia
AMBNZ	Ambulance New Zealand
ANZCPA	New Zealand College of Paramedicine
AV	Ambulance Victoria
CAA	Council of Ambulance Australia
CALD	Culturally and Linguistically Diverse
CASP	Critical Appraisal Skills Program
CBT	Cognitive Behaviour Therapy
CI	Critical incident
CID	Critical incident debriefing
CISD	Critical incident stress debriefing
CISM	Critical incident stress management
CVD	Cardiovascular disease
EAP	Employment Assistance Program
ESFR	Emergency service first responders
EM	Emergency medical callers
EMAS	Emergency Medical Ambulance Service
EMD	Emergency medical dispatch
EMS	Emergency Medical Service
EMT	Emergency medical transport
EPSP	Employee Peer Support Program
FUM	Frequent User Management Program
HACSU	Health and Community Service Union
HLM	Hierarchical linear modelling
HS	Health service provider
IPA	Interpretive Phenomenological Analysis
IR	Industrial relations
LGBTQI	Lesbian, Gay, Bisexual, Transgender, Queer, and Intersex
MeSH	Medical Subject Headings
MHAAT	Mental Health Acute Assessment Team

NCAU	National Council of Ambulance Unions
NCIS	National Coronial Information System
NPM	New Public Management
OHS	Occupational Health and Safety
PA	Paramedics Australasia
PFA	Psychological First Aid
PTG	Post-traumatic growth
PTSD	Post-traumatic stress disorder
PTSS	Post-traumatic stress symptoms
QAS	Queensland Ambulance Service
RAAV	Retired Ambulance Association of Victoria
SD	Standard deviation
SDM	Service development model
SJAANT	Saint John Ambulance Australia Northern Territory
TRiM	Trauma Risk Management
VAOs	Volunteer ambulance officers

EXECUTIVE SUMMARY

The scoping literature review of peer-reviewed and grey qualitative literature addressed the psychological, physical, and social well-being of paramedics, ambulance officers, ambulance volunteers and call-takers. The following questions were generated to address these issues:

Focus questions for peer-reviewed literature

1. What impact does emergency service work have on psychological well-being, and psycho-social health of paramedics, ambulance officers, ambulance volunteers, and ambulance call-takers?
2. What impact does the psychological stress linked to the workplace have on physical well-being for paramedics, ambulance officers, ambulance volunteers, and call-takers?
3. What role does stigma and self-stigma play in the utilisation and willingness to access mental health support for paramedics and call-takers?
4. How do paramedics, ambulance officers, ambulance volunteers, and call-takers articulate their work-related well-being needs?
5. How are symptoms of workplace fatigue, post-traumatic stress disorder (PTSD), critical incident stress and work-related stress reported and identified (either self-reported, peer-reported, or reported by the organisation)?
6. What other factors influence the utilisation and willingness to access mental health support by paramedics, ambulance officers, ambulance volunteers, and call-takers?
7. How is the mental health and well-being of paramedics, ambulance officers, ambulance volunteers, and call-takers affected by workflow, the nature of the work, and their changing roles?
8. What effects do organisational structures addressing respite, debriefing (both formal and informal), and workload have on paramedics, ambulance officers, ambulance volunteers, and call-takers' psychological and physical well-being?

Focus question for grey literature

What policies, processes, or resources (e.g. interventions/programs/legislation/industrial working conditions) are in place to manage work-place stress, psycho-social, and physical work-related stress? Specifically:

1. What formal programs and resources are currently provided that support mental healthcare and well-being for paramedics, ambulance officers, ambulance volunteers, and call-takers?
2. What informal or indirect provisions are currently in place to cater for post-critical stress incidences (e.g., time off road, leave, change in duties) and/or enforced retirement due to circumstances, and how does this influence superannuation/financial stability?
3. What innovations have been proposed by way of legislation, industrial agreements, or changes to policy to manage workplace stress, and the psychosocial or physical consequences of workplace stress, that could be implemented within the Australian context?

Document retrieval

A structured review of both the peer-reviewed (2000-2018) and grey literature was conducted. The peer-reviewed literature search was undertaken by a trained librarian. The review was registered with PROSPERO, an international database of systematic reviews

(https://www.crd.york.ac.uk/PROSPERO); Registration number CRD42019117397. The processes to select papers conformed to nationally and internationally recognised scoping review procedures with the extracted data addressing the eight key questions. The quality of each study was assessed using the Critical Appraisal Skills Program (CASP). Significantly, the Senate Inquiry into *Mental health conditions experienced by first responders, emergency service workers and volunteers* conducted by the Federal Government in 2018 provided additional material that was both relevant and timely.

Literature review findings

Signs and symptoms of stress

In addressing the impact of emergency service work on paramedics, ambulance officers, ambulance volunteers, and call-takers, this review has identified several signs and symptoms of psychological and psychosocial ill-health, including angry outbursts, low tolerance, sleep disturbances, deficits and fatigue, irritability, stress, and diminished social life. These groups also experienced an increased sense of isolation, hypervigilance and fear of doing the required role, unwanted and unpredictable flashbacks and intrusive thoughts, with high rates of sickness and days absent, depression, and anxiety, including suicidal ideation associated with Post Traumatic Stress Disorder (PTSD). In particular, rates of PTSD were estimated to be twice as high as other health professionals, with little consideration from organisations provided for retired paramedics, ambulance officers, or call-takers, or those forced to retire due to illness. Apart from the psychological impact, physical impacts resulting from exposure to occupational stress led to physical ailments such as headaches, gastrointestinal distress, sleep disruption, muscular skeletal injuries, fatigue, dietary problems, weight gain and, in some cases, exposure to dangerous pathogens.

Workplace stress: The role of critical incidents

Critical incidents of note were the death of a baby or child, neglect, abuse, burns, assault, family violence, drownings, harm to colleagues, suicide, grotesque mutilation, and cases that were of personal significance to the individual. For example, routine call-outs also had a negative impact on staff and were often cumulative in nature. Of significance is the impact on family life and relationships, given the symptoms outlined above. This impact can be exacerbated by shift-work that requires constant family negotiation and is disruptive to work-life balance, or by violence and uncertainty within the job.

Workplace stress: The role of organisational factors

Work-related stress goes far beyond coping with critical incidents. It also includes the impact of operational and work-culture factors producing an interactive effect with critical incidents. For example, New Public Management (NPM) productivity and efficiency measures such as restructures, key performance indicators, quotas, operational standards, response times, and expectations are pressures that paramedics have to manage, along with possible exposure to road-side violence. Together, these factors create an environment that is highly unpredictable, and may not allow adequate time for closure between jobs. As a consequence, these workplace demands challenge the paramedics', ambulance officers', and volunteers' vocation to care.

Paramedics also reported that managers were unable to deal effectively with bullying and negative workplace factors. A number of these difficulties arise from the changing nature of paramedicine from a vocationally-trained, male-dominated, blue-collar occupation to a university-trained and registered profession with an increasing number of women and younger recruits.

WorkCover claims are prolonged, stressful, and often difficult as burden of proof is hard to establish and the onus is on the individual to provide evidence of psychological injury while they are unwell. Claims are generally not accepted if there is any potential or link to a "reasonable action taken by employer". It was noted that cover and support needs to be extended to volunteers who make up a large component of the emergency response.

Positive individual factors in maintaining psychological health

Paramedics, ambulance officers, ambulance volunteers, and call-takers draw on a number of strategies to manage their mental health. Wellness is established through relationships and having interests outside of work, along with autonomy of practice and flexibility within the workplace, and trying to 'go with the flow'. Informal debriefing with colleagues and family enables paramedics, ambulance officers, ambulance volunteers, and call-takers to reframe incident(s), although this has the potential to bring home the trauma that might have a negative impact on family members. Others may maintain a strict demarcation between work and family life to avoid this.

Negative factors in maintaining psychological health

Negative strategies range from substance abuse to compartmentalising the trauma, emotionally distancing from patients, and self-stigmatising. The effectiveness of critical incident stress debriefing (CISD) is under-researched. There is increasing grounds to suggest that CISD is harmful and has been used despite very little supporting evidence; it should therefore be used with caution. A significant barrier to help-seeking is the belief that managers are inclined to disbelieve paramedics, ambulance officers, ambulance volunteers, and call-takers when the illness is a mental health or psychological injury. Conversely, managers reported that it was challenging to identify individuals in crisis and to know how to intervene. There was considerable cynicism about the availability, confidentiality, and effectiveness of peer support and professional systems, with many questioning the training of these professional counsellors. This was compounded by the stigmatising of mental health conditions by both management and the individuals concerned. Seeking help for a mental health condition is seen as a barrier to promotion.

Organisational supports in maintaining psychological health

Organisational support requires addressing the fall-out from the range of New Public Management strategies imposed on many government agencies that require high levels of productivity and efficiency but, as a consequence, provide inadequate time for recovery, result in long hours of over-time or missed meals, and fail to address the stigma associated with help-seeking. Essential to support was the provision of quality supervision, positive working relationships with supervisors, and implementing education and training for managers and on-road staff in dealing with, and recognising, stress management on an ongoing basis.

Ambulance organisations provide peer support, chaplaincy, training in psychological first aid (a strategy deemed appropriate), therapy dog programs, buddy programs, the use of 'quiet zones', and programs for LGBTQI (lesbian, gay bisexual, queer and intersex) and Aboriginal and Torres Strait Islander staff. There are also a range of campaigns aimed at the general public to raise awareness of PTSD for emergency service first responders (ESFRs) and calls for abuse and violence against paramedics and call-takers to stop. Ambulance services have also developed a range of healthy workplace and well-being initiatives such as international conferences, symposiums including collaborations with New Zealand ambulance

organisations, as well as developing and funding research. Funding of Employee Assistance Programs (EAPs) is another example. Research on pre-testing, or post-employment testing, for workplace resilience is inconclusive.

Overall, the individual is seen as being responsible for their own mental health and well-being.

Recommendations include:

1. Ambulance services should be funded to provide members and their families (employed and retired) with financial support to seek their own confidential psychological well-being counselling outside of the organisation, with no financial cap put on resource use.
2. The Workers Compensation claims process should be streamlined and accepted for conditions that are often chronic in nature and which require long-term support.
3. The industry and unions need to work with the Australian Health Practitioner Regulation Agency (AHPRA) to address the probability that with professional registration of paramedics, there is every possibility of legislative compulsory notification of a mental illness. This may prove to be a barrier to paramedics seeking mental health assistance or treatment, particularly if the regulator seeks to impose a non-practicing element of control against the reporter.
4. Funding for return-to-work programs.
5. Training for counsellors working in this space.

INTRODUCTION

> *"The particular occupational hazards arising from traumatic incidents that ambulance officers attend, means this workforce carries a foreseeable risk of psychological injury. The body of literature points to the probability of developing posttraumatic stress disorder and the risk arises from the cumulative exposure across the course of a career.*[1]

Paramedics have in many ways been 'the forgotten profession' within the healthcare system. This situation has arisen due to the tendency to traditionally 'silo' health professions into their specific disciplines. It is also a consequence of the physical separation of out-of-hospital care from hospital and other community clinical work that has tended to create a barrier to inter-professional understanding and collaboration, and to the fact that, in Australia, paramedics have often been in a portfolio other than health. The result has been that ambulance personnel and organisations are faced with the legacy of, and negative effects on, mental well-being that their role and the environments they work within create.[2-4] The nature of the work, the uncontrolled and often unpredictable environments, the everyday experience of trauma, and the cumulative nature of that trauma all play a key role in the development and impact of mental distress and psychological injury.[3,5] Organisational and occupational factors such as workload, work demands, shift work, limited time for debriefing or downtime, the hierarchical nature of supervision, and the lack of recognition are clearly shown to have effects on the well-being of ambulance personnel that are as significant as, if not greater than, the nature of the work itself.[3,5] The following excerpt from a submission to the Senate Committee Inquiry into the *Mental health and well-being of emergency first responders* succinctly identifies the operational and organisational factors which influence mental health and well-being within the pre-hospital setting.

> *"What is meant by institutional health: workplace conditions, relational toxicity, administrative intrusions, time pressures, excessive workload, resource limitations, poor job satisfaction, poor job engagement, nepotism, bullying, harassment, sexism, poor rosters, etc."* [6]

This commissioned review brings together the available literature from both peer-reviewed articles, public sources, and senate submissions to outline the effect of emergency medical response work on the psychological, psychosocial, and physical health of paramedics, ambulance officers, ambulance volunteers, and call-takers.

The current literature surrounding the prevalence of mental distress, mental illness, and the associated physical effects of psychological injury experienced by ambulance personnel demonstrates the large toll that emergency medical response takes on the individual. It is widely acknowledged that prevalence data in this area is likely to be under-reported due to stigma, challenges with reporting and accessing support, and the traditional culture of ambulance work.[2,5] A recent systematic review by Petrie et al.[7] of 27 international studies which reported on 30,878 ambulance personnel, including a meta-analysis of 18 of these studies, demonstrated the high rates of mental illness and injury this sector experiences. The analysis found estimated prevalence rates of 11% for post-traumatic stress injury (PTSI) and post-traumatic stress disorder (PTSD), 15% for depression, 15% for anxiety, and 27% for general psychological distress among ambulance personnel. A broader Canadian study[8] of emergency response and correctional workers (5,813 correctional workers, dispatchers, firefighters, paramedics, and police officers) showed that 44.5% screened positive for clinically significant symptoms of one or more diagnosable mental disorders. These rates are approximately four times higher than diagnosed rates for the general population at 10.1%. These rates were noted to be worryingly higher than earlier studies and suggested the rate of

anxiety among paramedics to be as high as 22%, with depression and suicidal ideation both at 10%.[8]

Safe Work Australia[9] reports that although serious mental disorder claims from first responders account for only a small percentage of overall claims at around 10 per cent (on average 711 accepted claims per year over the five years from 2011–12 to 2015–16), they have significantly more impact on the individual than other claims. Ambulance personnel make on average 120 serious claims per year resulting in extended time off work and significant compensation for ongoing care and support. First responders, including ambulance personnel, were shown to require approximately 26 to 27 weeks off work when experiencing work-related mental disorders or were medically retired. This length of time was notably higher than for all other serious mental disorder claims which typically averaged 15 weeks. Claims were almost five times longer than for other serious claims for all types of injuries and illnesses at 5 to 6 weeks. Safe Work Australia[9] found that the monetary payout for serious mental disorder claims for first responders was almost double that of all payments for serious mental disorder claims at around $49,600 compared with $26,800, and almost five times higher than the typical payment for all serious claims ($10,300). The data from Safe Work Australia demonstrates the high cost in monetary value, lost productivity, and lost personnel which is experienced by Ambulance Services due to the effect of mental distress and psychological injury.[9]

One of the challenges with measuring the mental well-being of ambulance personnel is the difficulty in longitudinal screening of personnel to identify the cumulative nature of the distress and the delayed presentation of symptoms. The predominant use of measures which focus on current symptoms potentially miss important information about late development of work-related distress, and therefore, result in potentially higher rates and prevalence in this group (Submission 60).[6]

Granter et al.[10] recently conducted a study with NHS ambulance services in England with the aim of further understanding the nature of the work ambulance personnel do and how this influences resilience and vulnerability to distress. Their recent study used the concept of *edgework* to explore how emergency workers respond to the varied and multidimensional nature of their work. The study explored their responses across four distinct, but inter-related, dimensions: temporal, physical, emotional, and organisational. This study of work culture highlighted a cross-section of intense, high energy, and time-critical aspects of their work intermixed with a mundane, operational, and bureaucratic work life.[10] The mixture of high intensity critical work and the mundane often creates a difficult shift for paramedics in their mindset, with little respite and little time for debriefing and dealing with administrative requirements during periods of intense emotions.[10]

In response to the increasing need to care for those providing emergency medical responses, a number of national and international initiatives have been proposed and implemented. For example, in 2018, the Paramedic Association of Canada in partnership with the Paramedic Chiefs of Canada, the Canadian Standards Association, and the Mental Health Commission launched a new standard.[11] This standard outlines sector-specific guidance for developing and maintaining a psychologically healthy and safe workplace. The standard specifically aims to assist ambulance organisations to: raise awareness of associated stigma, self-stigma and harassment; systematically identify sources of stress and psychological hazards; and examine measures that can be implemented to address those hazards. As part of early recognition and tackling the stigma associated with mental distress, Naylor et al.[12] suggests there needs to be a concerted effort to integrate mental health into new models of care for frontline service personnel as part of efforts to increase mental health literacy and to support education and

training. It is an essential component which should be provided to all frontline staff, regardless of the setting in which they work.[12]

In Australia, there are several national and State and Territory based initiatives to address ambulance personnel's mental health and illness. These include policy development, service-based strategies, and programs that are outlined in more detail in this report. In contrast to these policies, strategies, and programs, this report also provides a spotlight on the lived experience of paramedics, ambulance officers, and call-takers to identify the gaps in provision of care and the challenges faced by those who need the support and care for their psychological well-being.

RESEARCH QUESTIONS AND AIMS

The aim of the research is to provide a comprehensive scoping review of relevant peer-reviewed literature, current grey literature, and sourced information from ambulance reviews and services regarding the effects of emergency medical service work on the psychological, physical, and social well-being of ambulance personnel (paramedics, ambulance officers, ambulance volunteers, and call-takers). The review aims to outline the current qualitative data with analysis including current interventions and programs to address psychological, physical, and social well-being of ambulance personnel.

The following questions were generated as the basis for the scoping/systematic qualitative review.

Focus questions for systematic literature review

1. What impact does emergency service work have on the psychological well-being, and psycho-social health of paramedics, ambulance officers, ambulance volunteers, and ambulance call-takers?
2. What impact does the psychological stress linked to the workplace have on physical well-being for paramedics, ambulance officers, ambulance volunteers, and call-takers?
3. What role does stigma and self-stigma play in the utilisation and willingness to access mental health support for paramedics, ambulance officers, ambulance volunteers, and call-takers?
4. How do paramedics, ambulance officers, ambulance volunteers, and call-takers articulate their work-related well-being needs?
5. How are symptoms of workplace fatigue, post-traumatic stress disorder (PTSD), critical incident stress, and work-related stress reported and identified (either self-reported, peer-reported, or reported by the organisation)?
6. What other factors influence the utilisation and willingness to access mental health support by paramedics, ambulance officers, ambulance volunteers, and call-takers?
7. How are paramedics', ambulance officers', ambulance volunteers', and call-takers' mental health and well-being effected by workflow, the nature of work, and their changing roles?
8. What effect do organisational structures addressing respite, debriefing (both formal and informal) and workload have on paramedic, ambulance officers, and ambulance volunteers' psychological and physical well-being?

Focus questions for grey literature review

What policies, processes, or resources (e.g. interventions/programs/legislation/industrial working conditions) are in place to manage workplace stress, psychosocial, and physical work-related stress? Specifically:

1. What formal programs and resources are currently provided that support mental healthcare and well-being for paramedics, ambulance officers, ambulance volunteers, and call-takers?
2. What informal or indirect provisions are currently in place to cater for post-critical stress incidences (e.g., time off-road, leave, change in duties) and/or enforced retirement due to circumstances, and how does this influence superannuation and financial stability?
3. What innovations have been proposed by way of legislation, industrial agreements, or changes to policy to manage workplace stress, psychosocial, or physical consequences of workplace stress that could be implemented within the Australian context?

METHODS

The researchers conducted a structured review of both the peer-reviewed and grey literature to address the question of the psychological and physical effects of emergency service work on paramedics, ambulance officers, ambulance volunteers, and call-takers. The team conducted searches of the qualitative data found in the peer-reviewed literature from the years 2000 to 2018 and the current grey literature. The grey literature included the following data sources: (1) Google advanced search; (2) Dissertations/Theses; (3) Annual reports from ambulance services; (4) Senate Committee submissions; and (5) Hansard interview transcripts associated with the Senate Committee Inquiry into the *Mental health conditions experienced by first responders, emergency service workers and volunteers.*

The peer-reviewed literature search strategy

Search methods and screening

A systematic literature search was conducted to identify the relevant peer-reviewed literature using the PICO tool for qualitative research to identify key concepts.[13] The main search was conducted in the Ovid Medline database, and incorporated both MeSH (medical subject headings) terms/subject headings and text words. The search was then translated into the PsycInfo, Ovid EMcare, CINAHL, and Scopus databases. The searches were executed in October 2018, and the search strategies are reported in Appendix 1. The review was registered with PROSPERO, and allocated the registration number: CRD42019117397

Additional results were identified via a Google advanced search for the grey literature component of this report. Any results that appeared to be peer-reviewed literature were included in the screening process for the systematic literature review.

The abstracts of all results were screened independently by at least two reviewers with a third reviewing any discrepancies. The inclusion criteria were applied in order to capture the current literature in this area which has become more recognised and developed, particularly over the last 10 years. Full-text copies of the studies that were deemed eligible for inclusion based on their title and abstract were obtained for further screening. The inclusion and exclusion criteria shown in Table 1 were applied to the peer-reviewed literature. The retrieved results were exported into Endnote for collation.

Table 1: Inclusion and Exclusion Criteria for Peer-Reviewed Literature

Inclusion criteria	Exclusion criteria
• Published in the English language • Published January 1st 2000 – 2018 • Peer-reviewed literature • Reported an empirical study • Systematic reviews (provided they reported at least one qualitative study) • Other identified reviews (e.g., narrative, scoping, rapid) • Used qualitative data collection methods (for all, or some, components of the research) • Paramedic/EMS-based populations	• Not available in the English language • Published prior to 2000 • Non-peer-reviewed literature • Editorials, opinion pieces • Based on a single incident (e.g. disaster, terrorism) or focused on a specific case type/patient cohort (e.g. children, end-of-life care, CPR performance, Ebola, forensic) • Not specific to paramedic/EMS-based populations

Data extraction and synthesis

Data pertaining to a uniform set of variables was extracted from each study included in the review. These were the study aim and methodology, sample characteristics, data collection methods, data analysis methods, and study limitations. The findings of each study were extracted and collated according to the eight focus questions outlined on page 14. This enabled a thematic narrative synthesis to be undertaken in which commonalities and discrepancies between the findings of the studies were identified.[14]

In the case of the literature reviews, only the data from the relevant studies were included in this review. Where studies included other groups of first responders in addition to paramedics, ambulance officers, ambulance volunteers, or call-takers, only the data relating to ambulance personnel was extracted and included in this review.

Assessment of bias

The quality of each of the included studies was evaluated using the Critical Appraisal Skills Program (CASP) checklists for qualitative research and systematic literature reviews.[15,16] The CASP was used to evaluate the methods, results, and value of each study. Each question of the instrument was scored as 'yes' if the relevant information was reported, 'unsure' if it could not be determined, 'no' if the relevant information was not reported, and 'not applicable' if the question did not apply for that particular study. If the reviewer assessing a study was unsure if the criteria had been met, input was sought from a second reviewer.

The grey literature search strategy

Grey literature draws on publications produced by government, academics, industry, and business in print or electronic form that is protected by intellectual property rights and stored by libraries and institutional repositories, but not controlled by commercial publishers.[17] Grey literature can be further organised according to a hierarchy of evidence.[18] For example, Garousi and colleagues[18] suggest a three-tiered approach:

- First tier (high outlet control/high credibility): White literature: Books, magazines, government reports, white papers, working papers, patents, policies, peer-reviewed conference papers and presentations and proceedings, regulatory data, unpublished trial data, and dissertations and theses
- Second tier (moderate outlet control/moderate credibility): Public submissions to inquiries, annual reports, news articles, videos, PowerPoint posters, Q/A sites, web pages, and wiki articles
- Third tier (low outlet control/low credibility): Blogs, presentations, emails, and tweets

Given that most grey literature is available on the Internet in the form of PDF documents, the search was restricted to tiers 1 and 2. Tier 2 documents were restricted to the .org/.ed/.gov domains and limited to the first 5 screen layers. Databases included Proquest Dissertations & Theses, various paramedic sites in Australia, New Zealand, Canada, and the UK, and any sites or reports captured through a snowball process or through contact with experts.

Google Advanced Search

A Google advanced search for grey literature was conducted on the 5th December 2018. The results were sorted, with the most recently published listed first, and limited to the first 50 items listed. PDF or Webform items were read and checked for relevance to the research aims. The following terms were used for the search, and the inclusion and exclusion criteria listed in Table 2 were applied.

- Mental Health AND Paramedics
- Mental Health AND Ambulance Officers
- Mental Health AND Emergency Ambulance Workers
- Mental Health AND Call-takers
- Work-related Stress (Paramedics, Ambulance officers, OR call-takers)

Table 2: Inclusion and exclusion criteria for the Google advanced search

Inclusion criteria	Exclusion criteria
• Published in the English language • Published January 1st 2009 – 2020 • Media reports (specific detail on one or more criteria in scope) • Peer-reviewed conference papers • White papers, regulatory papers • Unpublished literature reviews	• Not available in the English language • Published prior to 2009 • Media report (lack of detail on criteria in scope, absence of actual strategies, programs or resources) • Websites/media describing PTSD symptoms without detail of how ambulance services respond • PowerPoints, conference posters, wiki articles, general web pages, recruitment advertisements • Blogs, chatrooms, forums, emails, tweets • News websites requiring membership or login details

NB: Peer-reviewed literature, Inquiry submissions, and annual reports removed to be placed with other literature search outcomes tables

Dissertations/Theses: Developing a register of existing relevant research in Australia and New Zealand

In order to develop a register of current research, the search process was divided into two components: firstly, doctoral dissertations published on the topic within the last five years (2013-2018) were retrieved; and secondly, contact was made with a number of universities for information on research projects in progress. Data from various organisations was not retrieved as this was assumed to be captured in the grey literature search.

Record of recent dissertations

Ninety-eight dissertations (Doctoral and Masters) were retrieved using the same key terms, databases, and processes used to access the peer-reviewed literature. This number was reduced to six once the inclusion and exclusion criteria were applied. The inclusion and exclusion criteria are listed in Table 3. Given that the focus of this section was on research in progress, only dissertations published in the last five years were read; the assumption being

that dissertation results beyond this timeframe should appear in peer-reviewed publication form and therefore be identified in the peer-reviewed literature search results. In all cases, an additional search was performed using Google Scholar to ascertain if the author had published papers from their dissertation study. No additional publications were retrieved.

Table 3: Inclusion and exclusion criteria for dissertations

Inclusion criteria	Exclusion criteria
• Published between 2013-2018 • All qualitative studies • All mixed methods studies • Paramedics or first responders • Met CASP criteria for qualitative research	• Published prior to 2013 • All quantitative studies • Studies of one-off disasters; e.g. Hurricane Katrina • Limited to nurses, physical therapists, police, or firefighters, and Emergency Departments or critical care units • Did not meet CASP criteria for qualitative research

All six studies retrieved came from North America, with five from the USA.[19-23] The study by Arce[19] was completed in the USA, but dealt with Canadian first responders. Each dissertation was read using the CASP criteria for qualitative research.[15] A summary was made of the thesis with a focus on: 1) the argument, 2) any innovations or strategies recommended, and 3) methodological trustworthiness. Methodological and theoretical approaches included text analysis,[19] grounded theory,[21] and phenomenological/Moustakas' transcendental phenomenological approach.[20,23] Additionally, a study that used discourse analysis was included as, although the study was quantitative, the data collection methods were qualitative.[22] A Canadian study on call-takers used a mixed methods approach with qualitative accounts attached to a survey.[24]

Current Research

Record of current research

A personal email by one research team member was sent to 15 paramedic academics, and key national leaders in the field from Australia and New Zealand. The email requested information on current research projects. Fifteen emails were sent out on the 10th December 2018, with 15 responses, although not all were from the same individuals who received the email; in many instances, individuals passed the email onto a colleague who responded with information (n=6).

Submissions to Australian Parliament Senate Inquiry into the high rates of mental health conditions experienced by first responders, emergency service workers and volunteers

Ninety-two submissions were submitted to the Inquiry. Each was reviewed for relevance, and 30 were determined as relating specifically to ambulance personnel.

These 30 submissions were then divided into three categories:

- Those written by ambulance personnel (including volunteers) (n=7)

- Those written by ambulance services (n=13)
- Those written by other organisations, but relating to EMS (n=10)

One submission from each of the three categories was chosen at random, and then reviewed independently by three members of the research team to identify tentative themes relating to the research questions. The research team then met to discuss and debate these themes before agreeing upon a consistent set of criteria to apply to, and guide, the coding of the remaining 27 submissions.

Ambulance Service annual reports

Two members of the research team reviewed available Ambulance Services annual reports for each Australian state and territory for workload, mental health initiatives and programs, and other pertinent policy and strategic directions which would have an influence on the mental health of staff. Annual reports were sourced from the most recent available from the ambulance services websites. The majority were from 2017 – 2018 with data in the reports ranging from 2015 – 2018. State elections and changes in policy within the different jurisdictions affected the currency of the annual reports and, in some cases, the information was embedded in the wider health, emergency, or justice portfolio. In incidences where the information was included in broader health reporting, only the specific details pertaining to the provision of ambulance services and ambulance personnel was reviewed and reported on.

RESULTS:

Peer-Reviewed Literature Results:

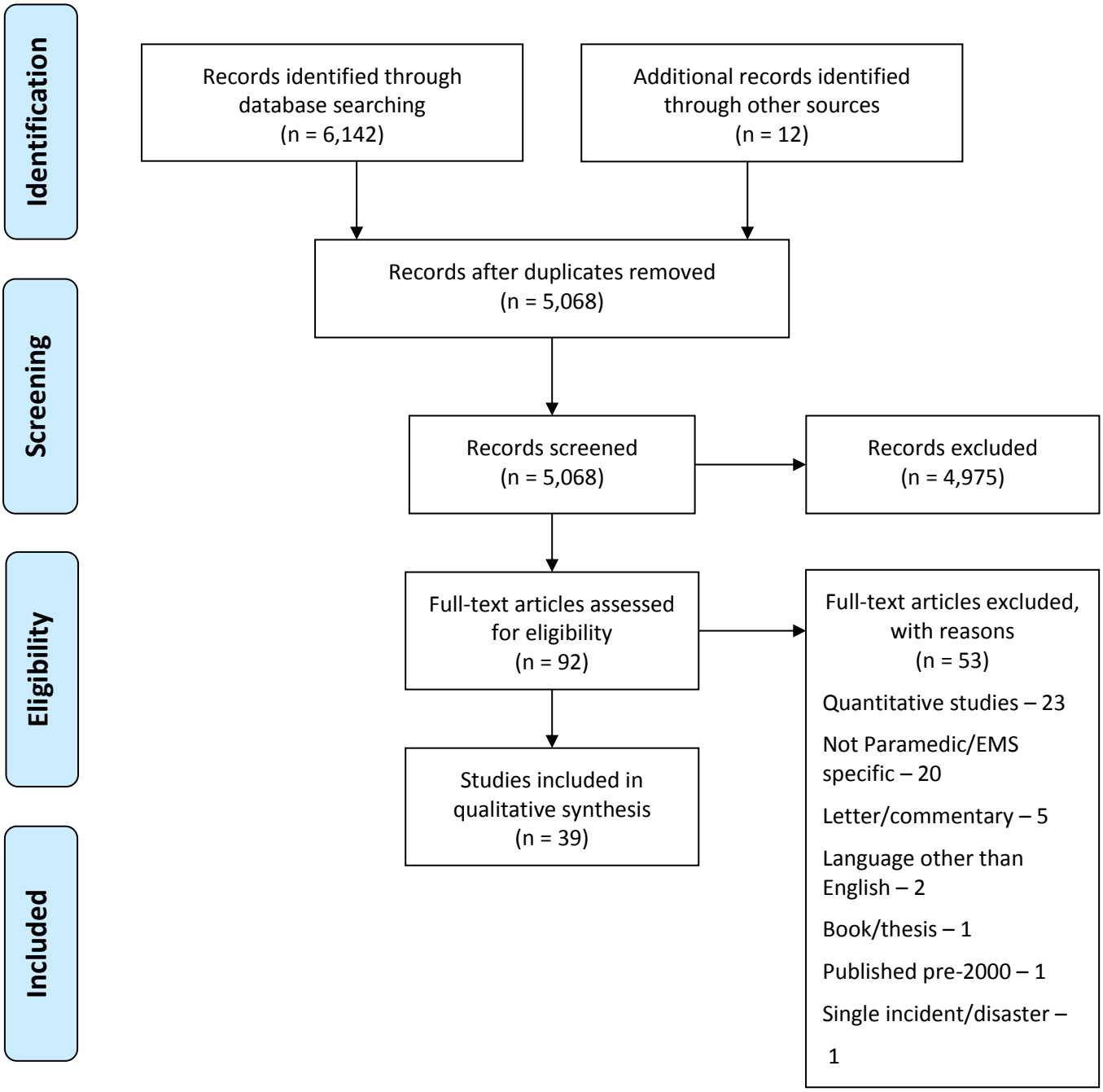
A total of 6,154 documents were retrieved from all searches, from which 1,086 duplicates were removed, as shown in Table 4 and Figure 1. The remaining 5,068 titles/abstracts were screened independently by at least two reviewers with a third reviewing discrepancies, based on the agreed inclusion and exclusion criteria. For literature reviews (including systematic reviews) that included at least one study that met the above criteria, only the data pertaining to the relevant qualitative study was included in this review.

From this screening process, 4,975 title abstracts were removed because they did not meet the eligibility criteria. The remaining 92 full-texts were reviewed, of which 39 articles were deemed to meet the eligibility criteria.

Table 4. Results retrieved from database searches

DATABASE	NUMBER OF RESULTS RETRIEVED
Ovid Medline (1946 to present), Epub Ahead of Print, In-Process & Other Non-Indexed Citations, and Ovid MEDLINE Daily	1,604
CINAHL (1891 to present)	656
Ovid Emcare (1995 to present)	1,260
PsycInfo (1806 to present)	2,352
Scopus (1788 to present)	270
Google advanced search	12
Total before duplicates removed	6,154
Total after duplicates removed	5,068

Figure 1. PRISMA 2009 Flow Diagram [25]



Summary of peer-reviewed literature

The studies included in the review are described in Appendix 2. The studies were conducted between 2000 and 2018 and focused on employees of Emergency Medical Service organisations including paramedics, ambulance officers, ambulance volunteers, emergency medical technicians, supervisors, and call-takers/dispatch staff (ambulance personnel). Where studies included other first responder groups, only the findings relating to emergency medical professionals were included in the review. The studies were conducted in a range of countries including the United States of America (n=9),[26-34] Australia (n=8),[35-42] Canada (n=6),[43-48] Sweden (n=5),[49-53] the United Kingdom (n=4),[54-57] Ireland (n=2),[58,59] Norway (n=2),[60,61] Saudi Arabia (n=1),[62] and Israel (n=1).[63] Another study was conducted in both Australia and the United Kingdom.[64] Of the 39 articles, the majority were deemed to be primary research articles (n=26),[27,29,33-39,43,44,46-51,53-55,57-59,62-64] with the remainder being either non-systematic literature reviews (n=9)[26,28,30-32,40-42,45] or systematic literature reviews (n=4).[52,56,60,61] Of the primary research studies, the most common data collection method was semi-structured interviews conducted either face-to-face or via telephone or Skype (n=11).[34,35,49-51,53-55,58,59,63] Four studies used a combination of semi-structured interviews and focus groups,[29,43,44,64] while another four utilised questionnaires with at least one open-ended question.[27,37,38,46] Six studies used a mixed methods approach, combining qualitative and quantitative approaches. These methods included the administration of a questionnaire and the conduct of interviews (n=4),[36,39,47,48] conducting both interviews and focus groups, attending organisational management meetings and examining information available on the public record (n=1),[57] and brainstorming, flow chart analysis, and examination of health service usage records (n=1).[62] Additionally, one article reported on the outcome of a court case pertaining to a paramedic who developed PTSD as a result of his employment.[33]

The results of the peer-reviewed literature are summarised in three main sections, with each section addressing the specific research questions identified for this review:

1. Impacts and work-related psychological and physical well-being needs (Questions 1, 2 and 4)
2. Help-seeking and access to supports (Questions 3, 5 and 6)
3. Impacts or organisational and systems parameters (Questions 7 and 8)

Section 1: Impacts and work-related psychological and physical well-being needs

The initial section of this review of the peer-reviewed literature describes the psychological and physical effects of frontline emergency medical work on ambulance personnel (paramedics, ambulance officers, ambulance volunteers, and medical dispatch employees (call-takers)). This section addresses the factors that were recognised by individuals and organisational management as being significant and contributing to mental health and well-being, or increasing the risk for developing mental health concerns or illnesses such as post-traumatic stress, depression, and anxiety. The section also targets how work-related psychological and physical well-being needs were articulated and framed by ambulance personnel. The findings of the studies discussed in Section 1 are summarised in Appendix 3.

Q1: Impacts on psychological well-being

The psychological effects were framed in terms of the following five themes: 1) Recognised reactions and associated signs and symptoms; 2) Effects on relationships with others; 3) Observations from “above” (e.g., the influence of organisational structures, policy, and support); 4) Perceived control versus real control and the nature of the event; and 5) Protective and coping mechanisms employed.

1) Recognised reactions, associated signs and symptoms, and causes

The peer-reviewed literature identifies a number of key commonly-recognised reactions to trauma and the associated signs and symptoms of adverse impacts of that trauma on ambulance personnels' psychological well-being. These signs and symptoms included angry outbursts and changes in tolerance to everyday interactions, sleep disturbances and deficits, irritability, decreased social life, and an increased sense of isolation. There was also an increase in vigilance and fear of doing the required role, unwanted and unpredictable flashbacks or intrusive thoughts, triggers as part of their ongoing role, fatigue, stress, high rates of sickness and days absent, and difficulty switching off.[28,31,32,35,40,43,45,48,55,59,61] The high and increasing rates of depression and anxiety, and the associated development of post-traumatic stress and suicidal ideation[26-28,30,31,33,43,49,50,56,61,62] were clearly oultined as current and systemic issues faced by paramedics and call-takers, with rates estimated as being twice as high as other health professionals.[32,33,36,39,45,48,55,56]

The nature of the work, including the routine 'everyday' call-outs, and those that generated associated secondary or vicarious trauma, have a cumulative effect on paramedics, ambulance officers, ambulance volunteers, and call-takers. This leaves ambulance personnel with feelings of frustration, helplessness, trepidation, and emotions of being overwhelmed during and after the event. The cumulative build up of emotions and continued exposure to stress leads to compassion fatigue and self-blame.[48,50,54,63] The literature notes rates of substance use (e.g., alcohol and other drugs) by ambulance personnel accelerate following exposure to critical incidents as a means to mitigate and manage these lived experiences.[28,32,43,48]

One paper specifically outlined how attending critical incidents or traumatic events has six almost distinct stages related to the experience. The initial stage involves the anticipation of the event and is characterised as the: (1) *pre-trauma and preparation for the unknown;* early in the management of the event, there is a keen sense of (2) *feelings of responsibility and the associated anxiety and fear of mistakes*. As the event progresses, paramedics recognise intense feelings of being (3) *insufficient and worthless, even though they have done everything possible* accompanied by the challenges of (4) *containing emotions and putting on the 'professional face'*. After the event, feelings of (5) *confusion, exhaustion, and of being in chaos* were dominant. Other more subtle feelings included being (6) *rejected by relatives or fellow workers*, feelings of *anger, frustration, resentment,* and bitterness, betrayal and rejection, self-loathing, guilt and humiliation, being out of control, trapped, and feelings of helplessness.[51]

2) Effects on relationships with others

The effects of workplace stress on the psychosocial well-being of ambulance personnel profoundly influences how they interact with others. The development of social withdrawal and the above-mentioned signs and symptoms creates an environment which negatively affects personal relationships, exacerbates the sense of isolation and withdrawal, and what they described as a debilitating loss of compassion. To manage this, paramedics specifically find themselves projecting difficult feelings and blame onto others, especially those close to them. This enables them to distance themselves from their negative emotions and alleviate their emotional distress. Paramedics also find themselves being hyper-alert and over-protective of family and friends because they know and see worst-case scenarios as part of their everyday work.[34,43,59,63]

The effects of shift work adds to the psychological stress due to the continuous negotiation between their role and identity at work and their personal life. Shift work specifically reduces the time for recovery and quality individual and family time with limits on their social life. Rosters, over-time, and other work commitments such as training and professional development often affects social and family gatherings at significant times of the year, and operating in a "9 to 5 world" was viewed as being potentially problematic. Paramedics describe shift work as having a negative effect on family roles and intimacy, and disrupting the structure and rhythm of home life with concerns about family safety and the risks of the job.[34]

3) Observations from "above": Occupational oversight and the operational environment

The occupational environment and nature of the work performed by ambulance personnel is well recognised as being a significant contributor to stress and a range of impacts on the mental and physical health of frontline emergency medical personnel. The prolonged and high exposure to excessive occupational demands and lack of crisis support leads to poor physical and mental health, increased sick leave, and lower productivity.[26,34,50,59,60] The literature outlines that prolonged stress is associated with increased overall morbidity, and physical and mental illnesses.[26,39] Along with a challenging occupational environment, operational factors also contribute to psychological stress. Operational factors such as key performance indicators, quotas, operational standards, response times, and expectations are pressures that must be managed by ambulance personnel on top of the actual clinical role and what they encounter everyday.[41,54] Another significant aspect that contributes to occupational stress is the feeling of a 'big brother' environment in which everything is observed and taped leading to call-takers being 'on-edge'.[35] The increased risk of potential aggression and violence that paramedics face, particularly verbal abuse, adds to the sense of work-related uncertainty and vulnerability. This is compounded if reports are not taken seriously or are under-reported, as culturally, potential agression and violence is seen as a 'normal part of the job'.[36]

The occupational and operational factors are discussed in greater depth later in the report under Section 3 of the peer-reviewed literature.

4) Perceived control, real control, and nature of event/trauma

To understand the psychological effects of the occupational environment on individuals, the nature of the critical incident, and the perceived or real sense of control were identified as factors that either mediate or increase the incidence of psychological injury. The literature identified key events and case types that contribute to the development of mental health concerns or illness for ambulance personnel. Critical incidents of significance were the death of a baby or child, neglect, abuse or harm, burns, assault, family violence, drownings, harm to colleagues,[27] suicide, grotesque mutilation, and those cases that had a personal significance ascribed to them (e.g., personally knowing the patient, working with children or the critically ill, and the death of patients).[38,47,48,52,53,59,60] Adding to the burden is the need to complete administrative and documentation requirements and to remain professional in further interactions with others following a critical incident.

Lack of control, whether perceived or real, particularly a lack of control over work, their environment, and increased work demands,[36,49,56] increases the incidence and severity of psychological distress, and are triggers for the development, or exacerbation, of existing mental illness. Associated with the lack of control is the immediate knowledge of outcomes during the critical incident, or lack of clinical feedback after the event, which influences how the critical incident is perceived and processed by ambulance personnel.[32,48,56] Other prominent issues in relation to feelings of loss of control and safety are workplace bullying,

actual assaults by others (patients, colleagues), loss of control through verbal and physical threats, the remoteness and isolation felt if subjected to these behaviours, and the lack of back-up support and reports of incidents not being taken seriously or not being followed-up by supervisors or the service.

5) Protective and coping mechanisms

Ambulance personnel use a number of strategies to cope with the nature of the work they face. Some of these strategies contribute to the delayed nature of mental illness presentations in ambulance personnel. One strategy used is compartmentalising the event and associated emotions to manage the immediate demands and to be able to provide care which is protective in the short-term, but which may be detrimental in the longer-term, or they may distance themselves emotionally from the patient to protect themselves. The literature suggests that avoidant strategies and information searching are often used to try to regain a sense of control and manage the demands they face.[48,54,57]

The nature of the work, although complex and challenging for mental health, also offers individuals a sense of identity and status, camaraderie and affiliation, structure and routine, direction and meaning, personal satisfaction, and intellectual stimulation and challenge. Social support, mainly emotional support, has also been shown to be crucial and protective against the development of PTSD.[60] These protective aspects of the work are significant, but are often minimised or disrupted if a critical incident/s challenges their sense of role and connection to the service, especially if re-tasked or forced to medically retire due to mental health concerns or illness.

The support and recognition of protective factors needs to be taken into account when designing and implementing support and organisational programmes for ambulance personnel.

Q2: Impacts on physical well-being

The physical side-effects of continued exposure to occupational stress manifests in predominantly somatic symptoms such as headaches, gastrointestinal distress, sleep disruption, fatigue, and their associated effects on work performance.[28,32,43,61] The fast-paced nature of the work and the psychological demands of the job do not allow for physical rest and processing of incidents,[47,53] which creates a vicious cycle for paramedics, ambulance officers, ambulance volunteers, and call-takers, and contributes to a difficult work-life balance and poor post-shift recovery.[35,39,45,55]

Due to the nature of the work, the major physical concerns experienced by paramedics are musculoskeletal injuries, specifically back problems, associated with the weight of patients and manual handling requirements in challenging environments. Other risks to physical health are blood-borne pathogens and needle-stick injuries which occur mostly with inexperienced clinicians.[30,39,53] Critical incident stress particularly affects physical health due to associated weight gain, back problems, and changes in appetite and diet. Some research has reported that it is difficult for paramedics to maintain or improve their general levels of fitness and maintain diet because of shift work and the lack of on-site exercise facilities.[39,59]

Sleep and disrupted sleep patterns are of increased interest as a key to understanding the physical fatigue and psychological effects of work in this area. Inadequate or disrupted sleep has been associated with cardiovascular disease (CVD), metabolic disease, depression, impairment in immune function (e.g., above and below normal pro- and anti-inflammatory cytokine levels), and hormone secretion (e.g., higher and flatter diurnal cortisol levels) which can instigate adverse psychological changes (e.g., symptoms of anxiety and depression).[42]

Both increases and decreases in cortisol levels have been found following stress exposure and indicate strain on the endocrine system which is expressed as either intensified or suppressed cortisol production. The literature indicates that pro-inflammatory cytokines (IL-6, IL-1β, IL-1ra and TNF-α) significantly increase or decrease from the baseline following single as well as multiple nights of complete and partial sleep restriction.[42] Elevated levels of sleep regulating cytokines (interleukin (IL)-6, IL-1β and TNF-α) have been associated with Cardio Vascular Disease (CVD), metabolic syndrome and depression. The research has suggested that higher, flatter diurnal cortisol patterns are related to depression and elevated morning cortisol levels are positively associated with CVD and metabolic syndrome (e.g., glucose intolerance, insulin sensitivity, hypertension, and atherosclerosis).[42]

Q4: Articulation of well-being needs

Ambulance personnel articulate their well-being needs in terms of occupational safety and in relation to their lived experience. Their needs were expressed under four key areas: organisational support, informal support, the use of humour, and individual mechanisms to cope such as detachment and external supports.[34,52,54,56]

1) Organisational and informal support:

Paramedics, ambulance officers, ambulance volunteers, and call-takers articulated a need for broader recognition of incidents that may be viewed as routine and yet have personal significance, or are cumulative in nature and cause significant distress, thus becoming a critical incident.[27] To adequately address critical incidents, the literature highlights that there needs to be structured recovery time after the event, active moves to address stigma surrounding mental health at all levels, ease of access to care, and supported case review in a non-judgemental environment with the focus on feedback and learning.

Both paramedics and call-takers identified a need for quality supervision, positive working relationships with managers and colleagues, and for workplace conflict to be taken seriously and addressed through education and training.[43,56] Call-takers in particular identified that workplace conflict exists when their roles are not acknowledged. On occasion, they felt that paramedics did not value them and that they were seen as *'punching bags'* in an *'us and them culture'*.[35,55]

Paramedics particularly identified that workplace violence is a significant issue and plays a major role in their feelings of vulnerability and affects their mental well-being. The incidence and threats of workplace violence are common in their role and need to be taken seriously by the organisation with continued prevention and occupational safety measures to be implemented (e.g. duress alarms, recognition of dangerous addresses, increasing training and knowledge of staff of minimisation strategies and how to deal with violent patients).[27,36]

2) *Individual mechanisms to cope*

Ambulance personnel describe experiencing emotional pain arising from the work they do with associated feelings of helplessness during and after extreme events. They describe feelings of emotional and cognitive detachment from patients and their families during more routine events to distance themselves from their daily contact with those suffering and needing their help.[63] Paramedics articulate how they cope with these emotional extremes by focusing on the technical and clinical aspects of the job and the immediacy of the activity. More broadly, both paramedics and call-takers expressed a need to maintain a sense of purpose and frame their work as meaningful.[63] As part of their role, they see themselves as advocates and are accustomed to using problem-solving and emotion-focused efforts to manage situations. These skills were considered essential to protecting oneself, as feeling useful and managing people and incidents was a positive and protective aspect of the role and contributed to their sense of identity. They also used advocacy skills as a means of addressing workplace stress and in attempts to get better resourcing (e.g. more personnel, equipment, and recognition) from management and the organisation to be able to perform their role effectively.[52]

Paramedics, ambulance officers, ambulance volunteers, call-takers, and their significant others employ cognitive strategies to manage not only the effects of their work environment, but also their relationships and life outside of work. These strategies include trying to *go with the flow* and realising that *you can only control what you can*, and to consider and allow yourself to *look at the worst possible scenario* as a means of cognitively and emotionally preparing for the demands of the role. During and after the event, it was essential to recognise early signs of distress and to know when to *seek social support* and how to *cultivate those friendships* and networks of support as essential preventative and positive means to reduce isolation. *Negotiating family role responsibilities* and learning *how to balance each other in personal relationships* were identified as being crucial for personal well-being. As part of the balance of work and life outside of work, establishing and *developing your own interests* created a sense of meaning and assisted in delineating work and home life.[34]

If illness, either psychological or physical or both, became evident, it forced a change in personal views of the self and highlighted the concept of *striking a balance with the experience of wellness and illness*. The sub-themes to this experience focused on the idea of *attaining and maintaining wellness through nurturing, encountering illness as an experience and a threat, and accepting and handling illness*. Wellness was nurtured by the experiences of *getting excitement and being challenged* within the work they did or could still do; *having freedom and flexibility* and a sense of autonomy in their work and life; *being "someone" and making a difference*; and *being one of the gang*.[53] If injury was severe, the positive and protective nature of being a contributing member was challenged and often created a sense of frustration, anger, and worthlessness. As part of framing wellness and illness, there was a distinct narrative of *encountering illness as an experience and a threat*. The illness experience had a physical, psychological, and social dimension which was encapsulated by the concepts that *the body makes itself heard*; *one can get worn out*; and *one can become too vulnerable or hardened*.[53]

Section 2: Help-seeking and access to supports

The findings of the studies discussed in Section 2 are summarised in Appendix 4.

Q5. How are symptoms of workplace fatigue, PTSD, critical incident stress, and work-related stress reported and identified (either self-reported, peer-reported, or reported by the organisation)?

As outlined in Section One, workplace stress and mental health concerns have significant effects on the individual and tend to be identified by the individual or by others around them, particularly family, colleagues, and supervisors.[43] In a study from Canada, 82% of the paramedic participants indicated that they had been overwhelmed or deeply disturbed by an incident(s), and those most affected had significantly more years of service than those who did not.[48] The literature identified angry outbursts, sleep problems, somatic symptoms such as indigestion and headaches, recurring dreams and nightmares, an increase in alcohol consumption, feeling alienated from other people, and an inability to relax and increased adrenalin as key characteristics and indicators for help-seeking. Many also described emotional signs such as feelings of despondency, intrusive thoughts of the incident(s), flashbacks, lowered motivation, and increasing difficulties in engaging in shift work, becoming irrational and over-protective due to the high levels of stress as indicators of decreased coping and reduced ability to mobilise strategies to manage.[53] Again, there was an acknowledgement that the impact of the work is cumulative, and can be delayed and lead to long-term sick leave.[49,53,59]

Rural and urban ambulance workers from the Netherlands were involved in a longitudinal study using standardised measures to obtain an insight into chronic stressors and health symptoms, specifically post-traumatic stress, burnout, and fatigue.[40] Fatigue was considered to be significant as an indicator of stress, and when individuals sought help, with operational implications for safety of staff and patients. Fatigue has been implicated in errors in drug calculations and administration (most common), slow reaction times, poor driving ability, and driving accidents such as falling asleep at the wheel, decreased decision-making ability, and altered concentration.[38] Fatigue was recognised as an ‘at risk’ factor for increased sick leave and work disability. Fatigue and work stress were often associated with a perceived lack of control, feelings of powerlessness, and an inability to change or influence management in relation to their working conditions.[40]

Engagement with help-seeking initially tended to involve informal debriefing with colleagues and family where paramedics and call-takers reviewed and reframed the incident(s) and then felt they should continue and ‘just get on with their day’.[35,54,55,63] A recognised difficulty with informal debriefing, especially with significant others such as family, is the potential for vicarious trauma and the inherent caution and conflict this may cause for the paramedic, ambulance officer, ambulance volunteer, or call-taker when they inadvertently ‘bring home’ the emotional experience of their work.[35] To decrease the potential of ‘unloading’ emotionally on those close to them, paramedics, ambulance officers, ambulance volunteers, and call-takers describe a conscious effort to keep work and home life separate.[55]

It was noted that one significant barrier to help-seeking was the belief that managers were inclined not to believe paramedics if they reported or presented with mental health concerns or psychological injury.[29] In response, ambulance managers reported that they found it challenging to identify when, and for whom, crisis support interventions were needed due to the real and perceived barriers and the nature of stigma.[50] As a result, paramedics reported a preference to go to their own doctor rather than one assigned by the service.[29,54] There was

also clear cynicism about the availability and effectiveness of established peer support and professional systems implemented by services, but support for appropriate widely-delivered training and compassion to allow for return-to-work strategies and reduced stigma.[56]

If injury did occur, there was a recognition that recovery was a long-term process, and to reach a point where mental illness was accepted and handled required a change in understanding and repositioning of the concept of self, using reasoning to understand the experience and learning techniques that were positive to manage the effects of illness rather than to self-medicate.[53]

Q3. What role does stigma and self-stigma play in the utilisation and willingness to access mental health support for paramedics and call-takers?

Individual, societal, and traditional cultural expectations of what it means to be a paramedic, ambulance officer, or volunteer have a pivotal influence on how mental health support is accessed and utilised. The willingness to access support relies on how safe a person feels to come forward, recognition by themselves or others that there is a problem, and a culture of support, education, and information which decreases both workplace and internal stigma.

The peer-reviewed literature identified that a culture which traditionally has a 'tough guy' and 'macho' mentality remains a challenge and perpetuates both workplace and internal stigma. The culture and nature of the role requires that paramedics and call-takers remain in control during and after an event. As part of this cultural expectation, there is constant pressure to control emotions and a desire to appear efficient and maintain professional identify, self-image, and confidence. To manage immediate emotions and to cope with cultural expectations, paramedics often use humour as a distraction technique and emotional outlet which is culturally sanctioned, to deal with critical incidents and high levels of stress.[35]

The stigma associated with mental illness and psychological injury was perceived as a potential threat to professional identity and a weakness which delayed paramedics and call-takers admitting to difficulties which often led to long periods of denial.[44,59,60,63] Self-stigma and work stigmatisation manifested with feelings of helplessness, anger, and guilt, leading to an unwillingness to ask for help from the mental health support services offered by the organisation (staff psychologists, employee assistance, or peer support teams).[44,59,63]

Another issue identified in the literature is a perceived culture of cover-up and lack of privacy if mental health concerns are raised, which leads to a reluctance to seek help, often resulting in low referral rates.[35,62] In many cases, outside medical support, particularly from general practitioners, was sought as a means to protect privacy. The use of medication to deal with associated stress levels, anxiety, and depression was associated with embarrassment and a sense of shame, and was particularly prevalent among female paramedics.[54] For many paramedics, the stigma is so firmly entrenched in the culture that it remains unrecognised and unchallenged.[44]

Q6. What other factors influence the utilisation and willingness to access mental health support by paramedics and call-takers?

Issues of privacy, confidentiality, and a lack of ease of referral were seen as key barriers to accessing support from the orgnisation.[44,59,62] Also of concern was the view that the services offered by the organisation, specifically counsellors, lacked the specific skills and competence

to deal with critical incident trauma.[44,59] The literature again highlighted that the real and perceived lack of understanding, the inability to handle conflict, and a sense of not being believed or 'covering up' by management compounded the lack of willingness to access help for mental health concerns or psychological injury.[35,47,59] Call-takers particularly identified a lack of support from management and felt that because they were not technically seen as frontline, their experience was somehow less significant and less traumatic, and they were expected to simply 'get over it'.[35] A safe and supportive working environment with constructive relationships was seen as crucial, and highlighted the need to establish and maintain social cohesion to protect against mental health concerns and psychological injury.[47]

The use of Critical Incident Stress Debriefing (CISD) was debated in the literature, particularly its effectiveness and implementation. One difficulty in the implementation and use of CISD is the way a critical incident is defined, and that often, the definition for paramedics, ambulance officers, ambulance volunteers, and call-takers was different than for that of management and counsellors who were employed to support and treat frontline staff.[43] There is growing evidence that CISD is harmful with very little supporting evidence and randomised controlled trials in support of the approach; it should therefore be used with caution.[31]

Section 3 Impacts of organisational and systems parameters

The findings of the studies discussed in Section 3 are summarised in Appendix 5.

Q7: Effects of workflow and nature of the work on mental health and well-being

In addressing the question of workflow and the nature of the work on the mental health and well-being of paramedics, ambulance officers, ambulance volunteers, and call-takers, a distinction needs to be made between: 1) the type of work performed, and 2) the way this work is organised. The nature of the work performed by all first responders, whether paramedics, emergency call-takers, or fire fighters is distinguished from other occupations by exposure to human distress and tragedy, referred to in the literature as critical incidents.[27,40,44,61] However, paramedics, ambulance officers, ambulance volunteers, and emergency call-takers share with all other professions and occupations issues to do with how work is organised, the industrial relations and human resources factors that have an impact on the job, the skills and qualities of managers who organise the work, and the personalities and experience of their immediate supervisors. Several studies note problems under this category of workflow.[26-29,31,35,37,40-43,46,47,49,53-57,59,61,64]

1) The type of work performed by paramedics, ambulance officers, and call-takers

The work of paramedics, ambulance officers, ambulance volunteers, and emergency call-takers is to respond to humans in distress during times of illness or accident. In defining these events, paramedics, ambulance officers, and ambulance volunteers make a distinction between specific traumatic events that produce an emotional toll, such as attending the death of a child or a suicide of a young person,[27,28,35,50] and a patient who may present a range of problematic or difficult responses such as someone with a mental health issue,[28] or domestic violence, a drug and alcohol incident, or road rage.[46] A further distinction is made under the broad heading of uncertainty or lack of control.[47,49,56,57,64] This concept covers situations in which they must proceed to a job without adequate knowledge, and unsure of what they will find or how to prepare themselves.[46] It also covers situations in which they may be exposed to pathogens given that it is often difficult to ensure universal precautions.[27,35,49,56] Furthermore, while a very narrow list of jobs are formally defined as critical incidents,[27,28,42] a common view is that any incident may prove to be critical to a paramedic, ambulance officer,

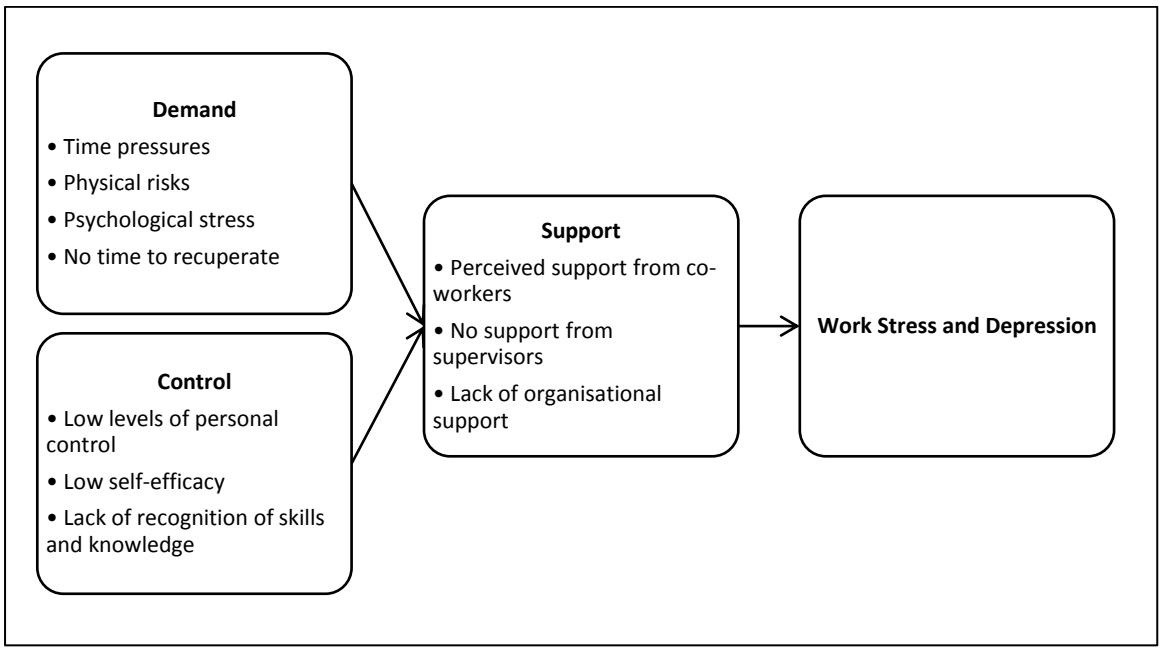
or ambulance volunteer at any particular time. The event does not need to be traumatic, it merely needs to evoke a strong emotional response in the individual paramedic.[50,61] It may have an immediate impact on their sense of well-being, or in some cases, many months or years later, even beyond retirement or it may precipitate early retirement.[58,61] Small or major events may have a cumulative effect on the paramedic's, ambulance officer's, or ambulance volunteer's stress levels, further compounding the uncertainty they must deal with in their daily work.[35,40,43,61] This is particularly so if there is little time between jobs and shifts to switch off from the trauma of a previous incident.[57,64]

2) The way the work is organised

The organisation of work can be examined from the perspective of the strength of the industrial protections in place, and the expertise of the human relations and managerial systems within the organisation.[47] The research is almost universal in reporting that paramedics, ambulance officers, ambulance volunteers, and emergency call-takers find factors linked to either industrial provisions, or the quality of human resources, problematic. Teasing these two factors apart is difficult, although we have categorised the issue into industrial relations arrangements and human resources interactions. In dealing with industrial relationships (IR) arrangements, paramedics report that given the workload pressures and performance metrics governing their jobs, they have no time to deal with, or digest, the effects of critical events. This is described as lack of time or capacity between jobs for closure following a distressful event.[31,35,38,42,43,54-56] Other factors noted are lack of resources including a lack of available ambulances to send to a job,[46,47,54] too few staff,[37] low salary requiring a second job,[28] long shifts, lack of sleep linked to shift work, fatigue as a result of long drives in rural areas, and failure to have the required breaks or meals as a result of work intensification resulting in poor eating habits and weight gain.[27,37,38,40-43,57,64] Added to this are the unreasonable metrics governing the speed required to get to a job, the time allowed at the site and later at the hospital before management radio in expecting the paramedic team to respond to the next case,[31,42,54,55,59] and the erosion of team work and skills mix through the appointment of single responders, or lower grades of workers who lack the necessary skills.[46,54,55] For call-takers, stressful issues include working alone during weekends and at night, the intensity of the work that makes it difficult to take breaks, and the antagonism of paramedics towards them.[55,59] These factors were seen to have a negative impact on job quality.[40]

Human resource interactions refer specifically to the relationship between on-road paramedics and emergency call-takers and those individuals who are positioned as senior or middle managers. Senior managers refer to those who organise the service, deal with budgets, productivity, efficiency measures, and recruitment and training, and who reside at a central office, while middle managers refer to team leaders, those who organise rosters, and immediate supervisors who reside at the station. The general view reported is one of alienation between management and supervisors and on-road paramedics, ambulance officers, and volunteers.[28,43,44,57,59,64] Managers are seen to lack empathy or consideration towards paramedic work, to downplay the impact of critical incidents, or the pace of the work,[44,57,64] to stigmatise those seeking help,[43,44,48] and to lack the skills and training to deal with workplace bullying.[43,44,64] Paramedics, ambulance officers, and volunteers report not being supported in legal and audit cases and to consistently have their skill base ignored through either a failure to be promoted, to access higher level roles, or being unable to make their own clinical decisions.[47,57,64] A further frustration is the constant restructuring of the organisation.[53] Regehr and Millar organise these IR problematics under the headings of Demand and Control as factors affecting the paramedic's sense of support.[47] Where these factors are absent, perceived or otherwise, it leads to work stress and depression.[47] This model is captured in Figure 2 as outlined by Regehr and Millar.

Figure 2. Conceptual model of paramedics' work-related stress[47]



Q8: Effects of organisational structures on psychological and physical well-being

The organisational response to paramedics', ambulance officers', ambulance volunteers', and call-takers' psychological and physical well-being is influenced by the structure and culture of the organisation,[47,52] along with the personal attributes of the paramedic such as their age, gender, years of experience, and psychological factors such as internal locus of control and the capacity to ensure a work-life balance.[27,28] In Australia, paramedic services are in a state of transition in terms of their workforce profile, and are victim to restructures as a result of pressures on government health budgets.[53] Historically, these services had their origins in paramilitary culture, with a strong hierarchical chain of command, which in turn prized stoicism in the face of adversity, and compliance, with little sense of worker control or clinical autonomy,[57,64] but a high level of teamwork, camaraderie, and public service.[27,47] Paramedicine has moved from a vocationally-trained, male-dominated, blue-collar occupation to a university-trained and registered profession with an increasing number of women and younger recruits who appear to be more comfortable with contemporary methods of stress management.[43,44] Providing a comprehensive duty-of-care service to paramedics along with meeting performance metrics during a time of cultural transition can prove difficult for any organisation.[58] This duty-of-care applies also to ambulance officers, ambulance volunteers, and call-takers, as well as to those who are about to retire.[35,55]

1) Managerial response to paramedic well-being and workplace stressors

Managerial responses can be examined through the way managers respond to on-road or call-taker distress and to the type of welfare services provided.[35,43,44,54,55,57,59,64] A number of studies have noted that on-road staff report that managers universally fail to understand, appreciate, or respond to the distress of critical incidents.[35,39,47,50,54,57,64] The alienation of call-takers is particularly marked.[55] They report that the only contact they have with management is when something goes wrong, or the organisation wishes them to implement an unpopular directive, leaving them to negotiate the ire of on-road staff.[35,55,59] In both cases, this lack of understanding is reinforced when there is no time to recover between jobs or to implement coping strategies, or when equipment is lacking, including ambulances to dispatch to patients in distress.[29,30] Importantly, management's lack of capacity to deal with organisational stressors such as bullying, workplace conflict, the management of rosters and sleep

deprivation, and promotion is also seen as a stressor that, in turn, exacerbates the paramedics', ambulance officers', and volunteers' reactions to traumatic incidents.[27,28,38,39,47,59]

The research literature reports that managers could assist paramedic stress through more thoughtful organisation of rosters to reduce fatigue and lack of sleep, along with ensuring adequate staffing to fill rosters and reduce overtime, and ensuring that rosters follow a clock-wise rotation.[38,40] It was acknowledged that additional research was required in this domain,[42] but that managers would benefit from doing occasional shifts to keep themselves abreast of on-road circumstances,[55] and for the need for adequate equipment.[29] Including call-takers in debriefing sessions along with paramedics was also seen as a positive strategy for managers to employ.[35]

2) Types of welfare services provided

The type of welfare services provided to call-takers and on-road staff, including those who have retired, is also complex requiring the organisation to ensure that any provision is evidence-based. The research literature reports ambiguity around the usefulness or otherwise of critical incident debriefing or mandatory crisis meetings,[26,31,44,50,58] as well as cognitive behavioural therapy.[30,43,56] There is debate about the time when management should offer services and what exactly should be provided.[30,50,62] The prevailing strategies promoted are pre-employment testing, peer support programs, and psychological first aid along with adequate training of front-line staff as well as managers and team leaders in order to recognise symptoms in individuals at risk.[26,43,44,55,60] In severe cases of PTSD, there is a recognition that pharmaceutical responses may be required until the paramedic, ambulance officer, or ambulance volunteer gains emotional control.[60] There is acknowledgement that there is limited research on pre-employment testing.[41,60] Peer support can be as simple as time out between jobs, but as a number of researchers note, time scarcity is a factor,[43,44,53] and for younger paramedics and ambulance officers, time to learn to trust colleagues.[43,59] One of the most important principles is to ensure the confidentiality of counselling services[43,44,62] given the highly competitive nature of the contemporary workplace,[44,64] and that counselling staff be formally trained and experienced in understanding the issues faced by paramedics, ambulance officers, ambulance volunteers, and call-takers.[30,44,45] The stress surrounding access to worker's compensation was explored in the US context.[33] This issue is explored in greater depth for the Australian context in the grey literature.

Training in stress management for managers is seen as essential, and for on-road staff is part of their personal armoury strengthening internal locus of control.[27,28] The research appears to suggest the cumulative impact of critical incidents makes years of experience a negative factor in well-being, but also notes that experience is a positive factor.[27,28,43,57,64] While we have noted elsewhere in this review that the individual is seen as primarily being responsible for maintaining their occupational well-being, the peer-reviewed literature points to the responsibility of the employer to provide both welfare services and a working environment conducive to health.[27,28,30,47,59]

Summary of peer-reviewed literature evaluation

The primary research articles and non-systematic literature reviews were generally of high quality, as shown in Appendices 6 and 7. Of the 39 studies, all but one clearly stated the aim of the research and all used an appropriate research design. However, a qualitative methodology was not considered appropriate for one of the studies, and the appropriateness could not be determined for a further two studies. The recruitment strategies used by the studies were deemed appropriate, except for three which were unable to be determined due to insufficient details being reported. We were unable to determine if one study collected data

in a way that addressed the research question; however, the remainder of the studies were deemed to have achieved this. The rigour of the data analysis performed was considered to be acceptable in most cases except for one study, and five for which this could not be determined. The areas that were addressed with the lowest frequency were the discussion of ethical issues and the consideration of the relationship between the researcher and the participants. Eight studies did not report on ethical issues and one did not provide sufficient information for a decision to be made. The relationship between the researcher and the participants was adequately described in 12 studies, while three did not present enough detail for a determination to be made. Each of the studies concluded with a clear statement of findings.

The five systematic literature reviews were also deemed to be of high quality. All the reviews stated a clearly focused question, each of which included all of the important relevant studies on the topic. Each of the reviews were considered to have had adequately assessed the quality of the included studies. It was decided that each of the reviews reported precise results and that these were reasonably combined. Although it could not be determined whether the findings of one review were able to be applied to a local population, the remainder were considered to have met this criterion. Finally, all of the reviews were assessed as having considered all relevant outcomes to the topic, and that the benefits to conducting the research were worth the foreseeable harms.

Grey Literature Results:

Summary: Google Advanced Search

A total of 38 documents were retrieved from the Google advanced search. Of these, 25 were Australian, six were from the UK, three were from the USA, and three were from Canada. Most (n=21) were online news stories, with the remainder being a mix of organisational website information, resource documents, government reports and response documents, and online newsletters and magazines. One commissioned report about ambulance culture,[65] and one unpublished literature review about the Road Ambulance Service were noted.[66] Due to the nature of the search being limited to the first 50 results for each search, and being ordered according to the most recent available, most items appeared within the past two years with the oldest item being from 2014; many older items were likely to be present, but were not viewed or included. The documents are summarised in Appendix 8.

Q1. What formal programs and resources are currently provided that support mental health care and well-being for paramedic/ambulance officers and call-takers?

The overall results were that ambulance organisations offered a range of broad whole-of-organisation programs and resources for their staff. These included peer support, chaplaincy, and access to psychological support. The focus was on whole-of-service awareness-raising to promote help-seeking, and broad training programs for staff. That is, the focus and responsibility remained largely on the individual to identify emotional problems and seek help. There were also general campaigns aimed at the general public to raise awareness of PTSD for Emergency Service First Responders (ESFR), and to call for a stop to abuse and violence against paramedics, ambulance officers, volunteers, and call-takers. There were some novel programs such as therapy dogs visiting call-takers,[67] a focus on resilience training in the UK sources, 'quiet zones' at worksites, and training where leaders also shared their experiences of distress and PTSD with frontline staff.[68] Additionally, an extensive report on bullying and addressing service culture,[69] and a Canadian newsletter discussing the introduction of presumptive coverage (in which burden of proof that it was work-related would not be required for paramedics who develop PTSD) were also identified.[70] The overwhelming sense from the online media stories was that, despite the rhetoric of organisational support programs and resources being available to staff, the reality was that little support was available and that coping with PTSD was the responsibility of the individual.

Q2. What informal or indirect provisions are currently in place to cater for post-critical stress incidences (e.g. time off-road, leave, change in duties) and/or enforced retirement due to circumstances, and how does this influence superannuation/financial stability?

There was very little information discussing informal or indirect provisions for ambulance staff to cater for post-critical stress incidences. In general, reports from staff were that, despite available programs, they felt harassed, stigmatised, made to feel that they were weak or making trouble if they raised concerns, and they worried about disciplinary action.[71-74] Communication problems and lack of effective leadership were cited as concerns.[66] Of interest, one report claimed that improvements in service culture and earlier intervention may account for the decreasing cost of compensation claims (despite the number of claims increasing steadily).[75] Reports involving the outcomes of the Royal Commission in Western Australia noted several findings of informal adverse working conditions and the culture of the organisations, making several recommendations for change.[71,76] Only one item discussed issues related to financial stability and retirement, reported reduced wages and the 'unwritten rule' about being a liability once paramedics had done 10 years of service.[77] One positive item from the USA discussed the benefits of counsellors going on shift 'ride-alongs' and how this promoted improved skills and understanding to support staff with emotional difficulties.[78]

Q3. What innovations have been proposed by way of legislation, industrial agreements, or changes to policy to manage workplace stress, psycho-social, or physical consequences of workplace stress that could be implemented within the Australian context?

A small number of innovations were reported, most of which were related to workplace stress, but none related directly to the physical consequences of workplace stress. The focus of most innovations was on 'high-level' responses such as the introduction of more workforce education and training, and broad campaigns to raise awareness and to address workplace culture.

One US item made specific suggestions about debriefing call-takers on the outcomes of their call to foster emotional closure.[79] In one news story, an individual paramedic suggested fitness and psychological evaluations prior to commencement and continuing at regular intervals throughout the staff member's career as standard procedure to avoid stigmatising individual staff.[80,81] Further to this, Ambulance Victoria's planned introduction of pre-employment psychological screening for new graduates was discussed in another news story.[81] Only two sources (both from Victoria) noted specific proposed changes to service support with no cap on expenses for medical appointments, medication, or hospital admissions,[82] and a proposal to collaboratively develop and trial more flexible rostering arrangements.[69]

Dissertation Results: Summary of findings

Dissertation questions

As shown in Appendix 9, the dissertation topics ranged from identifying the stressors that are unique to first responders,[20] to developing a paramedic stress triad theory,[21] to determining the efficacy and preference of various therapies used to assist paramedics, ambulance officers, and volunteers in dealing with stressful incidents. Examples included comparing the efficacy and preference for psychological first aid strategies with critical incident stress debriefing,[19] evaluating the impact of family, especially spouses, on stress management or recovery from PTSD,[22] to exploring pathways between post-traumatic stress and post-traumatic growth.[23] One study examined the impact of vicarious trauma on call-takers illustrating the similarities between call-taker PTSD symptoms and those of first responders at the scene such as police, firefighters, and paramedics.[24] There was a high degree of congruence in findings across all six studies, despite the differences in topics. For example, stressors ranged from the traumas seen at accident and crime scenes to the impact of organisational and personal issues on stress levels, with a strong message that personal trauma, including the paramedic's, ambulance officer's, or volunteer's personality, interact with organisational and environmental stressors (vicarious trauma on the road) to produce PTSD.[20,22,23] In summary, PTSD is not due to a lack of resilience, but occurs as a result of interactions between the individual, and the organisational and traumatic environments. Two studies noted that the full impact of traumatic incidents can be experienced many years after their occurrence, with their severity being equal to, if not more severe than, personnel returning from war or disaster zones.[20,23] Major stressors included working with vulnerable populations (particularly children, the elderly, dealing with death, and families), working conditions (particularly long shifts, low wages, and the structure of the working week), and the uncertainty and lack of safety that surrounds attending critical incident events.[20] All studies employed the Diagnostic and Statistical Manual of Mental Disorders 5th edition (DSM 5).

Dissertation findings

All six studies[19-24] made mention of critical incident debriefing. While Arce[19] promoted both critical incident debriefing and psychological first aid as strategies for immediate and long-term mental health and well-being, Arsenault[20] cautioned against using critical incident debriefing too soon after an event, as a one-off strategy, or without genuine interaction and engagement with those staff affected by particular events. Pare[23] was unable to uncover a pathway between PTSD and Post-Traumatic Growth (PTG). All researchers noted negative stress reactions such as addiction to alcohol and drugs, hyper-anxiety and vigilance, sleep problems, distancing, escape-avoidance and self-controlling, or shutting down of emotional responses. Positive responses included accepting responsibility, using humour, relational forms of coping such as talk therapies with either family, peers, or professionals, taking up hobbies, ensuring a strong work-life balance or separating work from home life, and engaging in continuing education. Two significant injunctions were to develop a personal relationship with a therapist and, in turn, that the therapist should have some familiarity with the field of work. Two studies noted that first responders use their religion as a stress coping mechanism, particularly as a way of reframing events.[20,21] Dow[21] argued for extensive preparatory and on-going education and training in stress management including how to recognise the symptoms within oneself and one's peers, and for employers to provide the appropriate action and support at critical times. Meaney-Pieroway's study[22] suggested that involving the first responder's partner in therapy was more effective as there was less focus on the self, and more on working on the impact of workplace trauma on the relationship. While three studies did note the impact of the organisational culture as being significant, solutions focused on individuals seeking psychological help by way of therapy or peer support. There was a recognition that the stigma attached to seeking help was still prevalent and detrimental to the mental well-being of paramedics and that a change in organisational culture was required. However, the overall focus of these studies was on the individual, rather than on the organisational aspects. The exceptions were Dow[21] and Arsenault[20] who saw part of the solution in organisational cultural change, training, and education.

Limitations

All six dissertations were written within the North American context and tended to refer to paramedics as first responders, along with fire-fighters, call-takers, and police, so that it was not always possible to distinguish occupational groups within the publications. This differed from the Evidence Map produced for the *Beyondblue* project in Australia which reported that none of the retrieved studies in their review included multi-service populations.[41] In addition, no distinctions were made between volunteers, ambulance officers, or paramedics, nor was it clear whether or not services were state, municipal, or private concerns. As will become clear from an analysis of the current research, Australia and New Zealand have the potential to provide nationwide responses, given that the majority of emergency medical services are state-funded and controlled.

Current Research

The organisations currently conducting research in the area of paramedicine, the research topics, including any publications available, and the key contact person are listed in Appendix 10.

Research questions or orientation

The current research into this space is being conducted at both a local and national level. *Beyondblue* has recently completed stages one and two of a comprehensive three-stage project on emergency responder stress, anxiety, and depression.[83,84] Stage three of this project is currently in progress. It aims to assist services to develop appropriate strategies to

deal with first responder mental health and well-being. The Heads Up publication[83] provides a blueprint for organisations, with the orientation directed towards the resilient workplace. The focus of this publication is on what the organisation can do for emergency responders, whether they are paid employees or volunteers, or at the point of retirement. The study by Varker and colleagues,[41] completed as part of the *Beyondblue* project, mapped the existing research. The authors identified that there were no studies on suicide, personality, stigma, or pre-employment factors that might have an impact on paramedics', ambulance officers', and volunteers' well-being. Nor were there any studies that investigated harm to self or others, bullying, or substance use, although there were studies that highlighted the role of the organisation in first responder mental health and well-being.

The focus of *Beyondblue* on the organisation's role in first responder mental health is consistent with other work currently underway or having been newly completed.[83] For example, Townsend and colleagues[85] apply *high reliability organisation theory* to paramedic mental health, while Hamling[86,87] suggests that first responder stress arises not from attending traumatic events, but primarily from the tension between the paramedic's values of care, service, and ambition (the call), and the organisation's tendency to subvert these aspirations through poor human resource practices. In line with Townsend et al.,[85] this theory suggests that first responder stress, anxiety, and depression are caused by poor HR practice,[86,87] rather than any lack of resilience on the part of the employee. These claims are perhaps clarified in an unpublished literature review by St John Ambulance WA that showed that paramedic resilience in the face of workplace trauma was mediated through the quality of the organisation's HR strategies.[88] HR and workplace practices include matters to do with shift work, long hours, over-time, minimal or no down-time, poor teamwork and leadership, bullying and stigma linked to help-seeking, and poor practices for those employees seeking compensation or assistance with mental health issues.

The Australian arm of the *IPAWS: International Paramedic Anxiety and Wellness Study* is in its infancy, but has the potential to provide cross-national evidence on the trauma profile of newly graduated paramedics across seven countries over a five year period (2018-2023). The results should point to the impact of education and training, as well as human resource, workplace, and industrial conditions, including the broader hospital system, on paramedic well-being and mental health.[89] Similarly, the study by Waller[90] will provide an up to-date reading of paramedic mental health. A new area of research within the Australian and New Zealand context is the management of workplace violence, particularly that perpetrated by patients or their families. This issue is addressed in the Queensland Ambulance Service publication[91] and is the focus of research currently being conducted by Peter O'Meara, Richard Brightwell, Brodie Thomas, and Brian Maguire with funding from the Falck Foundation (Maguire et al., 2017, Spelten et al., 2017).[92] The Carver study highlights additional stressors for paramedics when educating and mentoring newly graduated staff.[93]

Submissions to Inquiries

Senate Submissions

The role of Commonwealth, State, and Territory governments in addressing the high rates of mental health conditions experienced by first responders, emergency service workers, and volunteers.

The Senate Inquiry was conducted through the Education and Employment Reference Committee in 2018 with a broad range of submissions received from, and about, emergency services. The summary of the submission for this report focused on paramedics and call-takers and their role in the provision of emergency medical care. The terms of reference

covered the nature and underlying causes of mental conditions experienced, the linkage between emergency and first responder roles and mental health conditions, and how mental health conditions are managed with the aim of identifying areas for improvement.

Section 1: Defining the problem, the causes, and the gaps

Summaries of the submissions discussed in Section 1 are provided in Appendix 11.

What is the problem, what causes the problem, and what is missing?

> *"Our lives and welfare have value and reason, may be not so much within the political ranks outside of the media, but certainly to our wives, husbands, children, family and friends, but also to our community who year after year vote us as being the most trusted profession within Australia. Look after those who are left and those who are starting, this is not a new concern, it has been an issue since I started my career in 1992. Please make it stop."* [94]

The submissions were clearly divided into two distinct perspectives on the issue of the mental health of paramedics, ambulance officers, and ambulance volunteers and how this is managed within the workforce as a whole. The submissions from government and industry bodies focused on the provision of mental health support, with only a brief acknowledgement of the problem with little discussion on the effects of stigma and cultural norms on help-seeking. The government and industry submissions only touched on the organisational barriers which have an impact on the willingness of their employees to engage in industry-provided programs and the systemic nature of the issues faced by those with psychological injury.

The opposing view was provided by the personal 'lived experience' of paramedics, ambulance officers, ambulance volunteers, and call-takers with mental health concerns and psychological injury. These accounts outlined the challenges involved in obtaining recognition of mental distress and psychological injury, access to services and the appropriateness of those services, navigating management and organisational lack of support, and often feeling dismissed in this process. Broader issues were raised with compensation and WorkCover claims and the difficulty with recovery through isolation, forced medical retirement, and limited options for return-to-work or continual engagement in a role that was a significant part of their personal identity.

The nature of the problem and the underlying causes were *the role and the nature of the work, the work environment, and structural and management practices.*

The role and the nature of the work

Emergency medical work, as outlined in the peer-reviewed literature and acknowledged in the submissions, is a high-risk occupation for stress, and the nature of the work is such that there is exposure to trauma and critical incidents, either a single event or repeated exposure including vicarious trauma, that is cumulative, continual, and prolonged in nature. Of note is that what is perceived to be traumatic and causing trauma is individual and not the same for all paramedics, ambulance officers, ambulance volunteers, and call-takers, and the confronting jobs are not always those involving "blood and guts".

> *"Over his 44 years in service, 29 years of those as an educator and Critical Care Paramedic, he has attended over 2,000 cardiac arrests, 2,500 motor vehicle accidents,*

deceased patients including children, and has been assaulted. Assaults were generally not reported and were considered for a long time as part of the job. He was shot at, witnessed knife fights and witnessed a murder suicide." [95]

The particular occupational hazards arising from traumatic incidents that ambulance officers attend, means this workforce carries a foreseeable risk of psychological injury. The body of literature points to the probability of developing posttraumatic stress disorder and the risk arises from the cumulative exposure across the course of a career." [6]

Similar to the peer-reviewed literature, the personal significance of the case attended e.g., *being stationed at a highway location known for motor fatalities following the death of their partner and children in a fatal motor vehicle crash*,[96] those that involved children, or those involving self-harm or suicide were particularly noted as stressful, caused significant distress, and increased the likelihood of mental illness and psychological injury. Coping with feelings of "not being able to do enough" and clinically being challenged, often due to circumstances they have no control over, created a sense of hopelessness and frustration.

The symptomology of mental illness outlined in the submissions provided to the committee covered the varied and most prominent changes in behaviours, functionality, and experience which was covered in the peer-reviewed literature. Of note in all the sources in the review is the suicide rates in emergency service personnel which are four times higher than the national average, and suicide of ambulance paramedics which is three times higher than police and fire personnel. As previously highlighted, anxiety and depression are also much higher than the national average.

"Symptomology of mental health injury is varied, however irritability, low tolerance levels, arguing and rebelling against authority, and mood swings are common. This can further exacerbate injury by exclusion and can result in managers being less likely to assist people suffering from mental injury because they are 'difficult employees".[97]

"I've been diagnosed with Chronic PTSD. It's a creeping, insipid disease. It becomes part of the fabric of who you are, you don't see it in yourself, but others do. I have become mistrustful of my co-workers and ambulance management. I don't participate in any social functions. I feel isolated and mistrustful of others, and I feel very uncomfortable in public places. I feel isolated in a crowded room." [98]

Work environment

The personal submissions particularly demonstrated that the work environment in itself was a major source of stress and contributed to the development of mental health concerns and exacerbated the psychological injury. The physical nature of the work, fatigue, long working hours, shift work, the uncontrolled environments they work within, increasing demand with little downtime for informal debriefing, and the added pressures of key performance indicators all contribute to the high demand and stressful environment in which they work.

Of particular note is the increase in violence and aggression towards first responders and the overly bureaucratic processes for reporting, with safety reports being poorly managed or not actioned. The lack of policies and procedures was highlighted as a deterrent to reporting, or if these guidelines existed, they were not adequately followed or were misinterpreted. Reports of great concern were not only those experienced by paramedics, ambulance officers, ambulance volunteers, and call-takers in their dealings with the public, but also experiences of internal conflict and ongoing exposure to antisocial behaviour, bullying, and verbal, physical,

and sexual abuse within the workplace. The under-reporting of incidents, the associated development of psychological injury, and mental illness were key issues which stemmed from a lack of validation and acknowledgement, lack of confidence in the support system provided, and the associated stigma that still exists in asking for assistance in a traditionally male-dominated field e.g., *"an injury that cannot be seen and is a career killer"*.[98]

Clinical feedback and review were not routinely followed through or structured in a supportive and educational environment leading to poor or non-existent feedback which compounded the feelings of isolation and clinical incompetence. Contributing to the development of mental distress and uncertainty is the poor coordination and communication of practice change with little practitioner consultation, and resourcing and equipment being bounded by overly-complicated policies and processes.

With the introduction of professional registration, the possibility of legislative compulsory notification may prove to be a barrier to paramedics seeking mental health assistance or treatment, particularly where the regulator may seek to impose a non-practicing or restricted duties element of control against the reporter; this is an issue that needs to be carefully considered and addressed.

Structural and management practices

There is increasing acknowledgment of the influence that organisational structures, policies, and management practices have on mental health and the potential development of psychological injury within emergency services. Of note in the submissions and the peer-reviewed literature was the negative effect of poor management practices when dealing with mental health concerns and injury. The literature outlines the limited training for those in supervisory and management positions around how to proactively and compassionately support those they supervise who present with mental health concerns. The lack of training and engagement with the systemic nature of the issue prevents and discourages active help-seeking and engenders a sense of 'they don't care' in paramedics, ambulance officers, ambulance volunteers, and call-takers. The lack of acknowledgement, sensitivity, and support from supervisors, management, and the organisation were often accompanied with little communication from the organisation or direct isolation practices from the organisation e.g.,

> *"The attitude towards mental injury can be summarised colloquially as: "Suck it up princess, I have had that too. Get on with it."* [97]

The provision of support is perceived as limited and ad hoc with issues associated with stigma and lack of confidentiality creating barriers to what is provided by the organisation. These barriers and lack of faith in the services provided, including the professional services employed by organisations, as they are often not specifically trained or familiar with the often complex nature of the work first responders' encounter, leads to prolonged suffering and under-reporting of the distress. One submission recounted how the counsellor they had seen spent their time talking about "faith" and religion and how this would provide the solace and support they needed. Others recount how they spent the time consoling the counsellor due to the graphic and traumatic nature of what they had disclosed.

> *"People outside this work environment think that trauma we are exposed to is blood and guts. Blood and guts is normal to us. That's what we're trained for; we work with that all the time. The trauma for us is when you go to someone who's lost their loved one of 50 years.*

Or something unexpected happened. A 35 year old with stage 4 melanoma, his wife's there and his two little kids are running around. You look at him and he's actually seizing. Not moving, but an absent seizure and I know he's going to start a tonic-clonic seizure and I know I'm not going to be able to stop it and I know he's going to die. And there's kids, their two little kids. And you have to tell his wife "It doesn't look good, I'll do everything I can ..." [97]

"The kids get you after a while. There was a little girl, her mother had cut her fingers off, broke both of her legs and arms. She had cigarette bums from head to toe and she had a fractured skull. She'd been in foster care and she'd just been given back to her mother. And she killed her daughter. I've been a paramedic for 41 years, and after that long, it's all a soup, and it all comes back at different times of the day and night. You remember jobs you thought you'd forgotten. I feel as though I've seen and experienced things that no human should experience." [98]

Many years ago I accessed the Employee Assistance Program after attending a stressful incident. It was a total waste of time. I spent half the time explaining to the counsellor what paramedics do and the other half consoling her as she was distressed about what I had told her. PTS has definitely compounded over time. The longer you are a paramedic, the more stressful incidents you are exposed to, and the more your bucket of horrible memories and images fills up." [97]

There is little recognition that the individual is often placed in a position to source their support from outside the organisation from other specialists not connected with the service who specialise in this field of care. Individuals are faced with the financial burden and their families bear the brunt of changes to income, medical costs, ongoing challenges to care, navigating compensation, and the long-term nature of mental illness and psychological injury (longer absences from work and higher associated costs). To add to the burden, compensation and WorkCover claims are prolonged, stressful, and often difficult as the burden of proof is hard to establish and the onus is on the individual to provide evidence while they are unwell (e.g., forced to attend an independent medical review while on sick leave, not informed an independent medical review had been scheduled, sick leave and annual leave refused or not paid).

Claims are generally not accepted if there is any potential for, or link to, a 'reasonable action taken by employer" such as actions related to a dismissal, a retrenchment, a transfer of location, amended rosters, performance assessments/appraisals or disciplinary action. Claims can be expensive to defend for commencement of or ongoing treatment, rehabilitation, or compensation.

"The system seems to have no appreciation of the human side of it; you just seem to get labelled as a troublemaker, it's up to you to prove to the system that you're injured or unwell while you're trying to navigate your own experience of mental illness. It's not right."[97]

"It's what you get from doing this type of job. Workers Comp doesn't recognise that. If I have another relapse, I have to start another claim and go through the whole process again. There's no recognition that this is an ongoing thing and I'm going to need treatment for the rest of my life. They've closed their files and that file on me has been put away. I'm fixed; I'm now normal again. Maybe if I'd have broken my leg. But I didn't, and I'm not." [97]

Another significant issue of note is the needs of rural and remote paramedics, volunteers, and those who have retired or who, due to the nature of the psychological injury, cannot work. Volunteers may not be covered as readily under existing programs and often face unique needs because of geographical location (they often work in regional and rural areas), different educational background, are generally older, and have part- or full-time work commitments, close affiliations with their community, issues with confidentiality and stigma due to the close nature of the communities they work in, and limited medical professional access and availability. Program development needs to take these unique circumstances into account and be innovative in the delivery of services. In line with the general push for better support provision and understanding within organisations, there is a strong call for support and education to be scaffolded and designed across all the stages of the career and working lives of paramedics, ambulance officers, and call-takers, including pre-employment, internship, early career, later career, retirement and transition to other roles, and life after service.

> *"There's not much support at all. Ambulance … just seem to tick the boxes: you've got your rehab provider, your work certificates, the paperwork's done. Our job's done. I've still had to prove that I've got it after 41 years of doing this job. It's as obvious as dog's balls that after that time you've got to be carrying some baggage. But I'd do it all again tomorrow."* [98]

Key recommendations from a number of submissions are for an increase in funding to support service delivery, increase and improve access to Employee Assistance Programs (EAPs) and peer support services with investment in education, and early promotion, prevention, and monitoring programs across all levels of ambulance organisations. These services should not only be provided to employees themselves, but also to their families, significant others, and those who are transitioning to different roles within the organisation or into retirement.

Section 2: What is provided both formally and informally by services and nationally?

Summaries of the submissions discussed in Section 2 are provided in Appendices 12 and 13.

Across all jurisdictions, there have been developments in various strategies, policies, and programs to address the challenge of paramedic, ambulance officer, ambulance volunteer, and call-taker mental health and the prevention of psychological injury. Ambulance services have developed specific strategies for healthy workplaces, including mental health and well-being initiatives which have ranged from instigating international conferences with a focus on mental health, to joint symposiums with fellow members of the pre-hospital sector.

As a strategic and policy initiative, the Council of Ambulance Authorities (CAA), the National Council of Ambulance Unions (NCAU), and Ambulance New Zealand (AMBNZ) are joint signatories to a landmark document committing to a 10-step Health and Well-being Strategy for a resilient workforce and healthy workplace. CAA is also collaborating with universities across Australia and New Zealand to include mental health and well-being modules in paramedic courses. The collaboration between ambulance services and representative bodies such as *Beyondblue* has enabled research into the mental health and well-being of emergency service personnel, and the provision of strategies and programs to help combat mental health problems. *Beyondblue*[99] conducted an audit of mental health support programs in emergency services in Australia which looked at the type of support available and what programs are in place to help reduce the risk of psychological injury and suicide. This initial research identified that initiatives that help build resilience and self-care are paramount to improving the mental health and well-being of workers.[99]

Common services across jurisdictions offered to support those with mental health concerns and to prevent the advent of psychological injury include: pre-employment screening, employing psychologists and counsellors, chaplaincy, running peer support programs and on-going training in mental health support, buddy programs, peer support programs, retirement transition counselling, local community supports for LGBTQI, Aboriginal staff support roles, healthy workplace programs, and ensuring staff are aware of organisational support programs and early intervention strategies. For example, the "Priority One" program, a peer-based contact support group with professional psychologists available, is a multi-faceted program in Queensland. In other jurisdictions, similar programs are in place such as the "Multi-service Critical Incident Stress Management" System; however, this is only activated when a supervisor or employee asks for help and is fragmented between agencies. In several jurisdictions, an inter-service Critical Incident Stress Management (CISM) process is in place in which volunteers provide support to other agencies after crisis events. Unfortunately, organisationally-provided programs are either overwhelmed, or not sustained and not utilised for fear of a lack of confidentiality, lack of appropriate specialists, and limited access. Some jurisdictions have only begun peer support programs over the last four to five years and they are not seen as effective due to limited resourcing and support from the service. The dedicated staff who have been trained in mental health first aid are often overwhelmed and not able to provide support in a timely fashion, leaving those who need support in a situation where no peer support officers are available, either locally or via a telephone service. This situation will only change when adequate resourcing to meet demand occurs, which requires the full backing of the service to be effective.

Although all state government employees have access to an Employee Assistance Program (EAP), there is limited trust in the system due to negative past experiences and, as well, it does not provide around the clock coverage. The after-hours answering machine call back service reportedly does not generate call backs when requested. In response to questions and concerns around EAP programs, their confidentiality and discretion, timeliness and availability of counselling sessions, and the value of telephone counselling, a number of services are attempting to ensure oversight via the recruitment of chief psychologists and further recruitment of clinical psychologists.

The National Council of Ambulance Unions (NCAU) has outlined a series of key policy and program initiatives that should be instigated nationally to bring a cohesive agenda for implementation across all jurisdictions for the prevention and care of mental health concerns and psychological injury. The NCAU acknowledges that one of the biggest factors impacting on paramedic mental health and well-being is the ever-increasing demands on ambulance services. Ambulance services nationally are struggling to meet workloads. The NCAU believes that a demand-based funding model would help address the traditional boom-and-bust cycle of paramedic recruitment.

National standards and frameworks

The NCAU advocates for national standards for paramedical services in the prevention and care of those with mental health concerns and psychological injury, together with the creation of a monitoring body to ensure these standards are upheld. The NCAU advocates for the availability of universal services and pathways to ensure care becomes more accessible, more flexible, and more responsive at the earliest feasible stage. These universal services should be easily utilised by paramedics, ambulance officers, volunteers, and other practitioners, rather than using emergency departments as the default care portal for all cases of illness and injury. In 2016, *Beyondblue*[83] launched a comprehensive framework for mental health and

well-being in first responder agencies which assisted the NCAU in conjunction with the Council of Ambulance Authorities (CAA) to develop the Joint Health and Well-being Strategy as an overarching guide for services in the provision of promotion, prevention, and care strategies for their employees.

Specialised occupational mental health support and treatment services

Service provision in this area is challenging due to the time it takes to find and access medical and mental health support services that cater for the often unique needs of emergency workers. The NCAU agrees with the RANZCP's submission that medical professionals need to be aware of the unique contributing factors, circumstances, and presentations of emergency workers, first responders generally, and paramedics specifically. To address the need for clinical services that are responsive and are aware of the unique circumstances of emergency workers, the NCAU advocates for a national 'First Responders Care Network' which would register and coordinate specific services for emergency workers, paramedics, ambulance officers, ambulance volunteers, and call-takers specifically.

Workplace culture and management practices and reporting of mental health conditions

There needs to be greater recognition of the under-reporting of mental health concerns and psychological injury due to stigma and the cultural norms in a traditionally male-dominated organisation. Policy and programs are needed to specifically combat these barriers. The pivotal importance of workplace culture and management practices in dealing successfully with the mental health and well-being of paramedics is consistently outlined as key to addressing stigma and promoting early intervention. There is also the need to put funding and effort into occupational and return-to-work programs (alternate duties) which, at present, are seen as limited or lacking in meaning. The lack of meaningful work contributes to feelings of isolation, frustration, and disconnect felt by those paramedics, ambulance officers, and call-takers who have suffered a mental health issue or psychological injury. Greater collaboration between first responder and emergency services and health services would provide a holistic, broader, and more innovative way to increase targeted services and greater options for return-to-work and alternative pathways and duties to increase recovery and engagement.

Post-retirement mental health support services

In recognition of the lack of care, gaps in support, psychological trauma, and the legacy experienced by current and former employees, a number of ambulance services are researching and implementing programs to assist those in transition from work and those in retirement. For example, the state of Victoria has the "Retired and Former Employee Peer Support Program" (RAFE Peer Support) to identify the extent of mental health and well-being concerns among former ambulance employees and to provide support. The Queensland Ambulance Service provides assistance in the area of post-employment with transitional counselling pre- and post-employment. Other jurisdictions are similarly implementing programs and beginning to reach out to retirees and those on medical leave, although these are often still in their infancy and require adequate resourcing to be successful.

Positive change

Although there is still much progress required to tackle the significant barriers and issues faced by paramedics, ambulance officers, ambulance volunteers, call-takers, the services, and the profession, there are positive moves towards greater support and cultural change. As an example, Ambulance Victoria, in partnership with the Victorian Government, has through its 'Mental Health and Well-being Strategy 2016-19' rolled out a $1.2 million organisation-wide mental health training initiative for its employees. The service has created a 'Psychological Health and Well-being Consultative Group' to oversee and recommend initiatives and to promote improved communication and collaboration. Some of the current initiatives implemented through this investment are: a 24-hour telephone counselling and crisis support

service, a chaplaincy program, confidential and free counselling (through the Victorian Ambulance Counselling Unit), e-Learning packages, face-to-face workshops, a peer support program, and the SMART (Stress Management and Resilience Tools) program which is beginning to see better outcomes for staff. Other jurisdictions are formalising leadership development programs, and promoting contemporary leadership practices, psychological incident management resources, and staff support strategies.

As noted in the peer-reviewed literature, paramedics and call-takers are increasingly subjected to aggression, violence, and anti-social behaviour. To counter this and to provide a safe working environment, many jurisdictions are launching public anti-violence campaigns against ambulance personnel e.g., campaigns are running in Victoria, South Australia, and Tasmania.

WorkCover, human resources, and industrial relations have been identified as major areas of concern and key factors in the ongoing experience of psychological injury. Across the submissions to the Inquiry, there were calls to create a non-blame claims process, reduce the burden of proof, recognise the chronic nature of psychological injury, and reduce the distress involved in the process, to go some way to addressing these challenges in this adversarial process. The Office of Industrial Relations and WorkCover Queensland aim to reduce the impact and incidence of psychological injuries in the workplace through a range of initiatives to build industry capacity to identify and manage work-related psychosocial hazards. Current initiatives include the ongoing implementation of the Mental Health at Work Action Plan 2016-2020. In consultation with Safe Work Australia, other jurisdictions are investigating ways to better manage compensation and claims to reduce the burden of the process.

Other key changes occurring are the appointment of specific staff to oversee and coordinate mental health programs in the ambulance services, including welfare officers. These appointments are designed to place value on the importance of the mental health of staff, and to coordinate the assessment of ongoing care and support of members and their families via an informal chat or visit, or via recommendations to organisations such as local government services, Red Cross, the Salvation Army, and similar organisations.

Finally, the contribution of NGOs and charity groups in the care of paramedics, ambulance officers, ambulance volunteers, and call-takers who are suffering mental health concerns and psychological injuries cannot be underestimated. Organisations such as Sirens of Silence Charity Inc. offer a community of support for all emergency service personnel and act as a means to recovery. Its mandate is to support those who feel they are not receiving adequate assistance from their employer's EAP and those who do not feel safe to contact their employer EAP.[100] It aims to advocate for the creation of cultural change to remove the social stigma that has long been present within the emergency services, and to provide professional services including crisis support, educational programs, and financial assistance. These organisations often provide the assistance that is lacking, reduce financial burden, and ultimately, prevent suicide and save lives.

Ambulance Services Overview: Summary Ambulance Services Annual Reports 2017-2018

This section focuses on the mental health-specific policies and programs outlined by ambulance service annual reports from 2017-2018 or the most recent available. The annual reports reflect the ambulance services' public reporting and what is included as significant in

the ambulance services' policies and developments in this area. As demonstrated in the peer-reviewed literature and the Senate submissions, workloads, and the use of response times and key performance indicators (KPIs) play a role in the development of mental health concerns and psychological injury. These are outlined in the accompanying table in Appendix 14, with a brief summary provided below.

Workload data and key performance indicators (KPIs)

Over the period of 2017-2018, most jurisdictions experienced an increase in demand for services, with increases seen in clinical care for both emergency and non-emergency callouts. In response, most jurisdictions have in place policies and strategies to manage non-emergency demand with the development of alternative pathways for care and changes to clinical response models with greater integration with local and primary healthcare networks. For example, the South Australia Ambulance Service attended 217,787 callouts, a 6.7% increase from the previous year.[101] In Victoria, the metropolitan regions attended 127,679 non-emergency stretcher patients, which was 18,269 patients more than the previous year.[102] To manage demand and keep ambulances available, alternative transport and care pathways are being explored (e.g., in Victoria, 81,648 patients not in need of clinical care or monitoring en-route were transported in clinic cars which was 5,364 more than the previous year).[102]

Across some jurisdictions there have been strategic plans in place to increase recruitment and employment of paramedics and other ambulance personnel. Both Queensland and New South Wales have increased ambulance staffing to address the demand and the role of ambulance services. Queensland has employed an additional 127 ambulance officers as part of the Queensland Ambulance Services demand management strategy and to provide enhanced roster coverage.[103] The New South Wales Government Health Department has outlined significant infrastructure and employment spending for the New South Wales Ambulance Service to manage demand and increase service delivery.[104]

As part of government strategic plans to manage demand, privately-run ambulance services and designated lower acuity and patient transfer services are being developed and contracted by the state and territory operated ambulance services to cater for less acute patients. This is designed to allow the services to direct their resources towards acute and clinically high-demand patients and incidents.

Another key aspect in workload management and service provision is the large contingent of regional and rural career staff and volunteers due to the large geographical areas that most of the states and territories cover. The large contingent of volunteers has planning and mental health support implications with challenges in providing care in regional and remote locations. In these locations, access to mental health support is limited and peer support is often complicated by the close nature of the relationships between those receiving and those providing the support (often supervisors or colleagues that are well-known and that they work closely with). Delivery and implementation of training and provision of well-being and prevention strategies is also difficult due to operating in small communities and limited resourcing. Both the peer-reviewed literature and the submissions raised the unique needs of those providing emergency care in regional and rural areas.

Ambulance services follow a response time matrix as a measure of performance, and this is one of their most used key performance indicators. The priority or triage allocation of calls is based on the urgency of the care required. Top priority is given when incidents require urgent

paramedic and hospital care based on information available at the time of the call. These require an immediate response and have short response time indicators, such as less than 10-15 minutes (call-takers are trained to initiate first aid measures over the phone if they have not already been instigated while dispatch and arrival of ambulance care is occurring). The next priority is given to incidents which are acute and time-sensitive, but do not require a 'lights and sirens' response and usually have a response time performance indicator of within 30 minutes. The last broad triage category is when incidents are not urgent, but still require an ambulance response, and these have longer response time parameters. These operational indicators place high work demands on staff which, if not managed and acknowledged, can contribute to the development of mental health concerns and injury.

Mental health programs, policy and strategies

The majority of jurisdictions have come some way towards developing and implementing policies, mental health strategies, and programs to create a safer workplace and to address mental health and psychological injury. Of note is the state of Victoria which has a detailed *Mental Health and Well-being Strategy* which has been developed in partnership with *Beyondblue.*[83] The *Mental Health Matters @ AV* training program has been rolled out to all operational and corporate staff and has a focus on primary prevention, including suicide prevention, and increasing peer support and mental health resourcing for Ambulance Victoria staff.

Mental health resilience and awareness training is prominent across the majority of jurisdictions with a focus on supervisors and managers and their role in providing initial recognition and care for their staff who may be suffering a mental health concern. Peer support and EAP programs, as mentioned in the peer-review and submission sections, are highlighted as a key resource and principle measure across jurisdictions with the inclusion of special training to support diversity and inclusion strategies to ensure that the workplace is a safe environment for employees of diverse backgrounds e.g., LGBTQI, Indigenous, and CALD. All established peer support programs also liaise with, and link to, professional services (counsellors, psychologists, and psychiatrists) through their organisations. A number of ambulance services are using therapy and assistance dogs in their workplaces to provide paramedics and call-takers with another form of support and emotional connection to reduce stress.

A number of jurisdictions such as Queensland,[103] NSW,[104] Victoria,[102] and South Australia[101] are involved at both state and national level working groups and consultative forums on mental health and suicide prevention, which provides a national voice for organisations, expert collaboration, and networking. The involvement also ensures that pre-hospital care is represented in the discussion and drive for improvements in the mental health system with the aim to provide better coordination, care pathways and reduce acute presentations for those in the community who present with mental health concerns and illness.

Other organisational strategies that are being explored and implemented across ambulance organisations are fitness and well-being programs to support paramedics and call-takers in the use of relaxation and stress reduction techniques, physical fitness, and nutrition. Risk and hazard mitigation and improved reporting strategies have been trialled and implemented across ambulance services with the focus on aggression, violence, and bullying experienced in the workplace. Some jurisdictions are looking at more flexible leave policies, increased part-time and flexible work options, and looking at options to improve access to childcare and other supportive programs to improve and ease work and family commitments for their employees.

DISCUSSION

This report aims to provide a comprehensive overview of the relevant qualitative peer and grey literature dealing with the impact of emergency medical service work on paramedic psychological, physical, and social well-being. The search strategies employed for each review are outlined above. The grey literature available was enhanced by the findings of the Senate Inquiry into *Mental health conditions experienced by first responders, emergency service workers and volunteers* conducted by the Federal government in 2018, suggesting that the issues raised in this review are of concern beyond the paramedic profession and industry.[105]

In tackling this serious occupational health issue, the following questions were generated as the basis for the scoping/systematic qualitative review.

Focus Questions for Peer-Review

1. What impact does emergency service work have on paramedics, ambulance officers, and ambulance call-takers on their psychological well-being and psychosocial health?
2. What impact does the psychological stress linked to the workplace have on physical well-being for paramedics, ambulance offers, ambulance volunteers, and call-takers?
3. What role does stigma and self-stigma play in the utilisation and willingness to access mental health support for paramedics, ambulance officers, ambulance volunteers, and call-takers?
4. How do paramedics, ambulance officers, ambulance volunteers, and call-takers articulate their work-related well-being needs?
5. How are symptoms of workplace fatigue, PTSD, critical incident stress, and work-related stress reported and identified (either self-reported, peer-reported, or reported by the organisation)?
6. What other factors influence the utilisation and willingness to access mental health support by paramedics, ambulance officers, ambulance volunteers, and call-takers?
7. How is paramedics, ambulance officers, ambulance volunteers, and call-taker's mental health and well-being affected by workflow, the nature of the work, and their changing role?
8. What effect do organisational structures addressing respite, debriefing (both formal and informal), and workload have on paramedics', ambulance officers', and volunteers' psychological and physical well-being?

Grey Literature Focus Questions

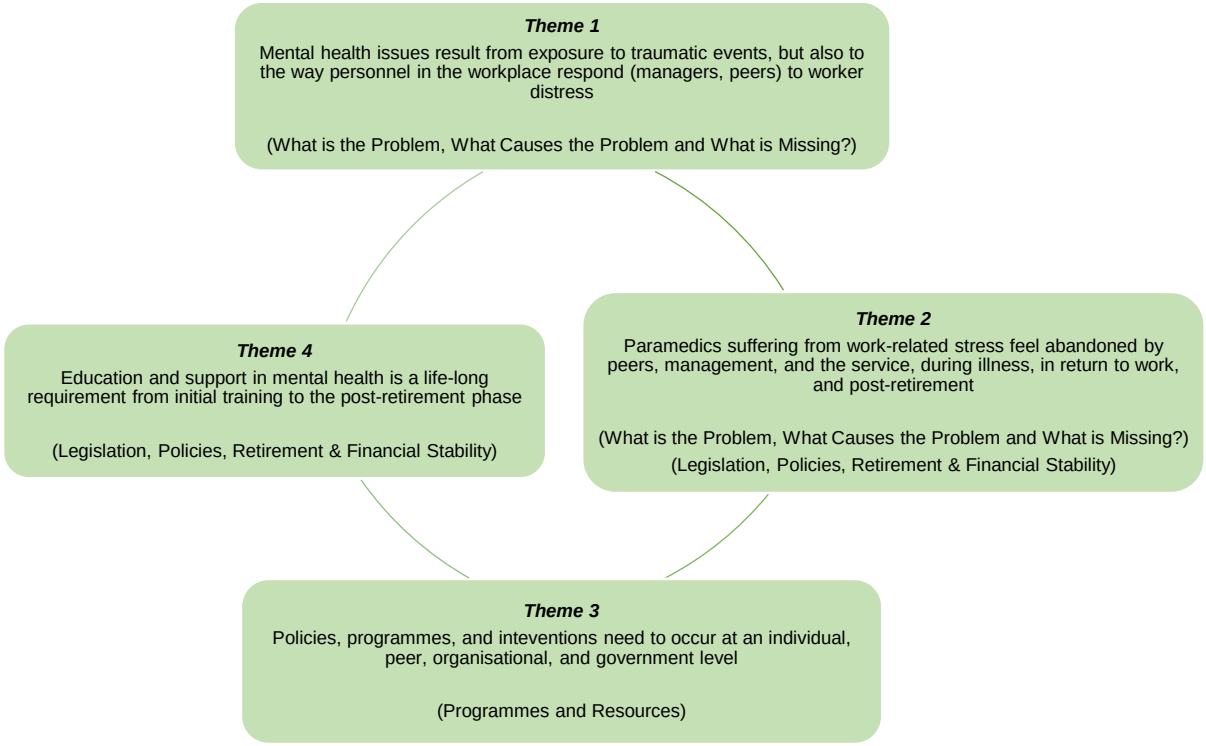
What policies, processes, or resources (e.g. interventions/programs/legislation/industrial working conditions) are in place to manage workplace stress, psychosocial, and physical work-related stress? Specifically:

1. What formal programs and resources are currently provided that support mental healthcare and well-being for paramedics, ambulance officers, ambulance volunteers, and call-takers?
2. What informal or indirect provisions are currently in place to cater for post-critical stress incidences (e.g., time off road, leave, change in duties) and/or enforced retirement due to circumstances, and how does this influence superannuation/financial stability?

3. What innovations have been proposed by way of legislation, industrial agreements, or changes to policy to manage workplace stress, psychosocial, or physical consequences of workplace stress that could be implemented within the Australian context?

In synthesizing the literature, four key themes emerged. These are listed in Figure 3 and discussed in detail below.

Figure 3. Four themes emerging from the literature review on paramedic well-being



Theme 1 - Mental health issues result from exposure to traumatic events, but also to the way personnel in the workplace respond (managers, peers) to worker distress

(What is the Problem, What Causes the Problem and What is Missing?)

Both the peer-review and grey literature reported on the negative impact of continuous and cumulative exposure to critical incidents. There was strong agreement on the types of incidents that paramedics find particularly distressing; for example, those reported by Donnelly and Bennett.[27] There was also evidence to suggest that, on occasion, mundane jobs that may appear routine for one paramedic can trigger anxiety or distress for another, making exposure to stress an individual response. Recovery is made difficult by the nature of shift-work, over-time, the physical demands of the job, and fatigue. The way the work is organised matters and needs to be addressed with physical and emotional well-being in mind.

Both the Australian and international literature confirms that the incidence of psychological distress in paramedics is not just a matter of exposure to traumatic incidents, but also arises from the way the organisation responds. This is both at the managerial and organisational level. For example, at the managerial level, the research reports that when paramedics

experience work-related stress and require access to formal avenues of care, many managers are unsympathetic and lack personal empathy. This is often assumed to have its origins in the military-like or macho culture that discourages emotional displays of distress.

Further to this, paramedics report that their access to appropriate care is made difficult through a variety of obstacles. These include failure to acknowledge the stress, lack of confidentiality, use of inappropriate therapies, poor return-to-work mechanisms, isolation, and stigmatisation, concerted efforts to obstruct access to Worker's Compensation provisions, and the lack of support post-retirement.

The interactional impact between exposure to traumatic events and workplace culture goes beyond the lack of support or open hostility shown by some managers within paramedic organisations, to the negative outcomes associated with New Public Management principles. This is best summed up by Hamling, in relation to the New Zealand experience,[86,87] who argued that the productivity and efficiency targets set by governments and, of necessity implemented by management, prevent on-road paramedics from achieving their *vocation to care*. She suggested that the culture of metrics (a major KPI for managers) means that on-road staff become more concerned about the speed in which a job is performed, than caring for the patient. This creates tension and stress in on-road paramedics and underpins their response to critical incidents and much of the workplace stress they experience. This view is supported by a number of other researchers in South Australia, the UK, and the USA, and was evident across the literature.[28,43,44,57,59,64,106]

Theme 2 - Paramedics suffering from work-related stress feel abandoned by peers, management, and service, during illness, in return-to-work, and post-retirement

The research reported overwhelmingly that paramedics perceive that they receive little support from the organisation when they are suffering from workplace stress, burnout, anxiety, and/or PTSD. They view mental illness as highly stigmatised within ambulance organisations, making them loathe to seek professional help. They report that informal helpful debriefing occurs largely outside of the service, with family or friends, despite most organisations providing peer support programs. Relying on outside support is not always satisfactory given the possibility that family and friends may be victim to vicarious trauma. Strategies such as black humour are used, but as recent research notes, it is increasingly seen as politically inappropriate, with paramedics on edge as to where and how it can be exercised (Goble unpublished).

Given the recognition that stress is cumulative, it is surprising that support for paramedic well-being does not extend to those who are forced to retire due to illness or after a successful career. There was little research reporting on support programs for retired paramedics, or recognition that they may be able to assist those currently in the service in need of care. As noted, despite many services providing support mechanisms, at all points in their career, the individual is seen as responsible, with management and the organisation being unable or unwilling to assist. Some research suggests that the failure of management to respond to paramedic stress does not arise from a lack of empathy, but a failure in appropriate skills. This lack of skills boils over into workplace management. Managers are perceived to lack skills in managing workplace conflict, confidentiality, and the daily routines that might alleviate fatigue. There is a universal alienation between on-road staff and management within a number of paramedic services. The research literature acknowledges that these views may be incorrect; however, the overwhelming alienation between management and front-line paramedics is a

key finding emerging from a significant number of papers across the peer-reviewed and grey literature.

Theme 3 - Policy, programmes, and interventions need to occur at an individual, peer, organisational, and government level (Programmes and Resources)

Research exploring how the issues highlighted above can be addressed takes a holistic approach moving from the individual through to the organisation. The organisation can assist through a number of strategies and processes that can be divided between cultural shifts and organisational re-design. Cultural action is required to remove the stigma associated with seeking help for work-related stress. This is a difficult task and is probably only achieved when actions speak louder than any rhetoric on the topic. Actions taken up by the organisation will in turn shift cultural perceptions. These include recognising that workplace stress is cumulative and that it can manifest itself following routine incidents. This may mean that the service needs to organise staffing and rosters to allow paramedics with structured recovery time between jobs so that fatigue and emotional processes can be addressed. This will invariably have an impact on budgets along with the need for a more concerted focus on the training and education of leaders and managers in all aspects of their role, from designing rosters that safeguard well-being, to recognising colleagues in distress, to the management of workplace tensions.

A number of studies reported mixed results from the support programs currently used within Ambulance Services. For example, there was considerable discussion in the literature on the use of Critical Incident De-briefing with claims that it lacked an evidence base. The tension here is between responding with efficiency as against seeking the evidence as to what is the most appropriate program to put in place to support employees. There was support for providing robust peer-support programs, and independent counselling services that extended to paramedic and call-taker's families and to those who have retired. The current recommendation is for psychological first-aid support programs.

A number of studies suggested pre-employment testing, although once again, there was insufficient evidence to support the recommendation. There is also recognition that younger employees may respond to different approaches, particularly if the organisation uses the internship period to demonstrate its commitment to workplace well-being. Surprisingly, researchers felt obliged to note that counselling staff needed to be highly trained in the area, and to have some knowledge of the work performed by ambulance staff. Given that the Senate Inquiry highlighted the issue within Australia, it may be possible to form an industry-wide research and support system that allows for the programs to be shared across first-responder industries, at either state or national level.

Theme 4 - Education and support in mental health is a life-long requirement from initial training to post-retirement phase

It is clear from the research literature that the problems require ongoing education. This is not simply a matter of preparing students for the role and then stepping back. Given that the research in the area will continue to evolve, and possibly the work itself may become more stressful, education and support programs for paramedics, call-takers, students, and managers needs to be a life-long pursuit. The literature points to a lack of adequate education preparation for student paramedics within some university and vocational programs. While this can be remedied, it needs strong support from the industry for students to take these programs of study seriously, and real evidence that the content is not already part of the curriculum.

What's missing?

Part of the brief for this literature review was to identify programs or innovations that could be implemented by ambulance services as strategies for mitigating workplace stress; for example, time off-road doing projects or promotional work for those paramedics who might be experiencing burn-out. There was no literature retrieved that reported on programs of this nature, although there are a number of recommendations in the various Senate reports and inquiries that form part of the grey literature reported here. As already noted, there was very little literature on support services for retired paramedics, although mention was made of these former workers in the Senate Inquiry. This is a major deficit in the research literature.

The Senate Inquiry provides a number of recommendations that can be taken up by ambulance organisations, unions, and professional associations. Whatever strategies are pursued, they should be based on research evidence, or if this is not available, an evaluation should accompany implementation. The research literature suggests that these strategies are of two kinds: specific programs to assist paramedics to manage the distress that comes with attending to critical incidents, and secondly, programs that deal with organisational issues. The research literature reported in this review points overwhelmingly to an interactional effect between critical incidents and workplace culture and demands. This culture includes day-to-day managerial actions and responses, but also the impact of shift work, poorly-managed rosters, and long hours of work with little time between for recovery. Coupled with work-flow issues are the negative consequences of New Public Management productivity and efficiency targets, now part of many ambulance services that require the job to be done within particular time limits. There is sufficient evidence within the research literature to suggest that these metrics are detrimental to the mental and physical health and well-being of paramedics and call-takers.

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APPENDICES

Appendix 1. Systematic literature review search strategies

Ovid MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Daily and Versions(R)

1	adaptation, psychological/ or emotional adjustment/ or "sense of coherence"/
2	Stress, Psychological/ or "Quality of Life"/
3	Mental Health/
4	(((Psycholog* or psychosocial* or emotion*) adj3 (wellbeing or well-being or "well being" or resilience or health or stable or stabilit* or skill*)) or (physical adj3 (health or wellbeing or "well being" or well-being or fitness or health)) or mental health or stress).tw,kf.
5	or/1-4
6	emergency responders/ or emergency medical technicians/
7	"Transportation of Patients"/ or Patient Transfer/
8	(paramedic* or ambulance* or "Emergency Medical Technician*" or "Patient Transfer*" or "transport* patient*" or "First Responder*" or Out-of-hospital*or Pre-hospital* or "Emergency Medical Services" or "emergency medical dispatch*" or "emergency dispatch centre*" or "community paramedic*" or "intensive care paramedic").tw,kf.
9	or/6-8
10	5 and 9
11	(case reports or letter or editorial or commentaries or note or protocol).pt.
12	10 not 11
13	limit 12 to English language

Ovid Emcare

1	psychological well being/ or mental health/
2	emotional adjustment/
3	*stress/
4	*job stress/
5	(((Psycholog* or psychosocial* or emotion*) adj3 (wellbeing or well-being or "well being" or resilience or health or stable or stabilit* or skill*)) or (physical adj3 (health or wellbeing or "well being" or well-being or fitness or health)) or mental health or stress).tw,kw.
6	or/1-5
7	rescue personnel/ or paramedical personnel/
8	patient transport/
9	(paramedic* or ambulance* or "Emergency Medical Technician*" or "Patient Transfer*" or "transport* patient*" or "First Responder*" or Out-of-hospital*or Pre-hospital* or "Emergency Medical Services" or "emergency medical dispatch*" or "emergency dispatch centre*" or "community paramedic*" or "intensive care paramedic").tw,kw.
10	or/7-9
11	(case reports or letter or editorial or commentaries or note or protocol).pt.
12	6 and 10

PsycINFO

1	exp Well Being/
2	exp Physical Health/ or exp Mental Health/
3	exp Coping Behavior/
4	*STRESS/ or *OCCUPATIONAL STRESS/
5	exp *Posttraumatic Stress Disorder/
6	(((Psycholog* or psychosocial* or emotion*) adj3 (wellbeing or well-being or "well being" or resilience or health or stable or stabilit* or skill*)) or (physical adj3 (health or wellbeing or "well being" or well-being or fitness or health)) or mental health or stress).ti,ab,id.
7	or/1-6
8	*Emergency Services/ or *Crisis Intervention Services/
9	exp First Responders/
10	exp Client Transfer/
11	(paramedic* or ambulance* or "Emergency Medical Technician*" or "Patient Transfer*" or "transport* patient*" or "First Responder*" or Out-of-hospital*or Pre-hospital* or "Emergency Medical Services" or "emergency medical dispatch*" or "emergency dispatch centre*" or "community paramedic*" or "intensive care paramedic").ti,ab,id.
12	or/8-11
13	7 and 12
14	(letter or editorial or note or commentary or case report or protocol).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]
15	13 not 14
16	limit 15 to English language

CINAHL

S12	S5 AND S10
S11	S5 AND S10
S10	S6 OR S7 OR S8 OR S9
S9	TI ((paramedic* or ambulance* or "Emergency Medical Technician*" or "Patient Transfer*" or "transport* patient*" or "First Responder*" or Out-of-hospital*or Pre-hospital* or "Emergency Medical Services" or "emergency medical dispatch*" or "emergency dispatch centre*" or "community paramedic*" or "intensive care paramedic")) OR AB ((paramedic* or ambulance* or "Emergency Medical Technician*" or "Patient Transfer*" or "transport* patient*" or "First Responder*" or Out-of-hospital*or Pre-hospital* or "Emergency Medical Services" or "emergency medical dispatch*" or "emergency dispatch centre*" or "community paramedic*" or "intensive care paramedic"))
S8	TI first responders or firefighters or paramedics or police or emergency services
S7	(MH "Emergency Medical Technicians")
S6	(MH "Emergency Medical Technician Attitudes")
S5	S1 OR S2 OR S3 OR S4
S4	TI ((((Psycholog* or psychosocial* or emotion*) N2 (wellbeing or well-being or "well being" or resilience or health or stable or stabilit* or skill*)) or (physical N2 (health or wellbeing or "well being" or well-being or fitness or health)) or mental health or stress)) OR AB ((((Psycholog* or psychosocial* or emotion*) N2 (wellbeing or well-being or "well being" or resilience or health or stable or stabilit* or skill*)) or (physical N2 (health or wellbeing or "well being" or well-being or fitness or health)) or mental health or stress))
S3	(MH "Support, Psychosocial") OR (MH "Psychosocial Adaptation (Iowa NOC)")
S2	(MH "Emotions") OR (MH "Psychosocial Adjustment: Life Change (Iowa NOC)") OR (MH "Emotional Support (Iowa NIC)") OR (MH "Caregiver Emotional Health (Iowa NOC)")
S1	(MH "Adaptation, Psychological") OR (MH "Stress, Psychological") OR (MH "Psychology, Social")

Scopus

TITLE-ABS-KEY ((psycholog* OR psychosocial* OR emotion*) W/2 (wellbeing OR well-being OR "well being" OR resilience OR health OR stable OR stabilit* OR skill*)) OR (physical W/2 (health OR wellbeing OR "well being" OR well-being OR fitness OR health)) OR mental AND health OR stress*)) AND TITLE-ABS-KEY (paramedic* OR ambulance* OR "Emergency Medical Technician*" OR "Patient Transfer*" OR "transport* patient*" OR "First Responder*" OR out-of-hospital*or AND pre-hospital* OR "Emergency Medical Services" OR "emergency medical dispatch*" OR "emergency dispatch centre*" OR "community paramedic*" OR "intensive care paramedic") AND (LIMIT-TO (LANGUAGE , "English"))

Appendix 2: Description of studies included in systematic literature review (peer-reviewed literature)

Author, year, country	Aim & methodology	Sampling & participant/study characteristics	Data collection methods	Data analysis methods	Limitations
Adams et al.[35] 2015 Australia	Explore the lived experience of EMDs to understand how best to promote mental health and well-being. Interpretive phenomenology.	35 volunteers responded to work email invitation, then random selection of those approached for interview. This was followed by strategic targeting to ensure a mix of age, gender, region, experience level. N = 16, 6M/10F, 24-57 years old, 2-15 years' experience.	Semi-structured in-depth interviews via phone or Skype.	Interpretive Phenomenological Analysis (IPA).	May not be generalisable to all EMD roles due to individual and group variability, cultural influences, and operational and organisational procedures.
Alzahrani et al.[62] 2017 Saudi Arabia	Investigate the reasons for low usage of psychological support services among EMS staff and implement interventions to increase this usage. Evaluation of an intervention.	A multi-disciplinary team investigated the causes of low service usage, including a team leader, psychiatrist, psychologist, station manager, information technologist, and general director. Contact was made via email. Participant characteristics unknown.	For analysis of the causes of low usage, consultation with multi-disciplinary team involving brainstorming, fishbone diagram, and flow chart analysis. For evaluation of the interventions, psychological service usage records were tracked producing quantitative data.	For analysis of causes of low usage, root cause analysis was implemented. For evaluating the interventions, changes in psychological service usage were tracked during specified periods.	Minimal detail provided regarding participant characteristics.
Avraham et al.[63] 2014 Israel	Explore the lived experience of paramedics related to critical incidents and associated coping strategies. Phenomenology.	Purposive sampling through direct contact with paramedics (specific medium of contact unspecified). N = 15, 10M/5F, 23-51 years old, 1-26 years' experience.	In-depth semi-structured interviews conducted out of work hours that were 1-3 hours in length.	Thematic content analysis.	Small purposive sample in one jurisdiction that limits generalisability to other countries.
Bledsoe & Barnes[26] 2003	Provide a critical review of Critical Incident Stress debriefing.	Refers mainly to literature review by McNally et al. (2003). Number of studies included unclear. Types of	Unspecified.	Unspecified.	Relies mainly on findings of an existing literature review.

Author, year, country	Aim & methodology	Sampling & participant/study characteristics	Data collection methods	Data analysis methods	Limitations
USA		study designs include meta-analyses, RCTs, quasi-experimental.			
Bracken-Scally et al.[58] 2015 Ireland	Explore policies and procedures for retirement in the emergency services.	Purposive sampling across ambulance and fire services in both urban and rural areas, with a primary focus on managers. N = 14, 13M/1F, 42-73 years old, average years' experience = 27.	Semi-structured interviews with predefined topics via phone or face-to-face, 30 minutes in length.	Framework analysis.	Focused primarily on still-employed individuals despite a focus on retirement.
Chappell & Mayhew[36] 2009 Australia	Highlight the risks of violence to operational ambulance officers and to identify the consequences for their physical and mental well-being.	Recruitment approach not stated. Sample size represents 1 in 66 ambulance officers in the Australian public health system. Sub-set of a larger study of 400 health workers. N = 40, 29M/11F.	Standardised, semi-structured interview-based questionnaire (including quantitative and qualitative questions). Conducted primarily on a 1-1, face-to-face basis.	Qualitative data analysis methods not stated.	Minimal detail provided regarding study methodology.
Clompus & Albarran[54] 2016 England	Explore the question of how paramedics survive their work within the current healthcare climate specifically by focusing on what resilience strategies they have and how childhood experiences may have developed these resilience strategies.	Participants recruited through advert in paramedic bulletin. Paramedics were from one UK service. N = 7, 2M/5F, 30-59 years old.	Narrative interview free association, then semi-structured interview. Conducted by first author.	Thematic analysis.	5 of the 7 participants were female.
Coxon et al.[55] 2016 England	Explore the lived experience of EM Dispatch staff to understand how best to identify the key stressors and their impact on staff well-being.	Purposive sampling from an emergency office with total staff of 36. N = 9, 5M/4F, 26-60 years old, 2-14 years' experience.	Semi-structured, in-depth face-to-face interviews.	Interpretive study using Braun and Clark's 6-step method.	May not be generalisable to all EMD roles due to individual and group variability, cultural influences, and operational and organisational

Author, year, country	Aim & methodology	Sampling & participant/study characteristics	Data collection methods	Data analysis methods	Limitations
					procedures. Researchers had little experience or knowledge of the area.
Donnelly & Bennett[27] 2014 USA	Develop an instrument or inventory of critical incidents exposure and to test the correlation between critical incident exposure and PTSS.	Purposive sampling with 12,000 EMT and paramedics contacted. N = 1,633 responders, 1208M/418F, median years of experience = 6 years.	Online questionnaire including one qualitative question.	Statistical analysis of quantitative data and thematic analysis of qualitative data.	Only 13% responded from total population, and only one question on the questionnaire was qualitative.
Donnelly & Siebert[28] 2009 USA	Systematic literature review with primary focus on developing a model that demonstrates the relationship between PTSD and PTSS and alcohol and drugs.	Empirical articles using emergency medical responders. Additionally, given limited literature, other study designs (e.g., theoretical) and related populations also included (e.g., police).	Major search engines used: Medline, PsychInfo, Cambridge Scientific Abstracts, Articles First/WorldCat, and Google Scholar.	Not applicable.	Limited literature base to draw from.
Dropkin et al.[29] 2015 USA	Identify main work-related health problems among EMS workers in the United States; identify risk factors at the organisational, task, and exposure level; identify prevention strategies; examine these issues between participants (EMS workers and supervisors). Grounded theory.	Convenience sampling from an EMS medical services unit in North Eastern USA. N = 58, 58M/0F, mostly under 35 years old, slight majority of sample with greater than 8 years' experience.	In-depth interviews with paramedics and focus groups with EMS team leaders.	Grounded theory approach to describe thematically what each group wanted followed by comparison between EMS workers and team leaders and managers.	All male sample.
Flannery[30] 2015 USA	Explore the rationale for introducing multi-modal treatment response to PTSD in first responders: police, firefighters, and paramedics.	Empirical articles focusing on trauma in first responders reviewed. Minimal information provided regarding study characteristics.	Unspecified.	Unspecified.	Limited literature base to draw from.

Author, year, country	Aim & methodology	Sampling & participant/study characteristics	Data collection methods	Data analysis methods	Limitations
Forslund et al.[49] 2004 Sweden	Analyse the situations that emergency operators experienced as difficult to deal with and their reflections on how they managed them. Phenomenological hermeneutic approach.	Purposive sampling of telephone emergency operators recruited from one centre via letter outlining research. N = 16, 6M/10F, 34-56 years old, average years of experience = 15.	Individual interviews conducted at call centres.	Three stages: naïve reading, structural analysis, and interpreted whole.	Interviews should have been done elsewhere.
Gallagher & McGilloway[59] 2008 Ireland	Evaluate the impact of CIs on frontline staff by allowing them to tell their own stories.	Conducted in Health Board with population of 1.6 million and large service with radius of 622 square miles. N = 27, 27M/0F, 31-60 years old, slight majority with more than 16 years' experience.	Interviews based on a literature review and findings from stage one of research.	Thematic analysis, but methodological approach not noted. Analysis done by both authors, sharing in reading a random sample of transcripts.	All male sample.
Gist & Harris Taylor[31] 2008 USA	Outline the requirements of the organisation and the individual to maintain mental health and avoid PTSD.	Empirical articles focusing on how to maintain health of EMS staff. Minimal information provided regarding study characteristics.	Unspecified.	Unspecified.	Review methodology not documented.
Golding et al.[56] 2017 England	Investigate and synthesise available evidence relating to the psychological health of EDC operatives, and identify key stressors that they experience.	2,358 articles retrieved, 16 accepted. Included qualitative and quantitative studies. Inclusion criteria: •Participants were emergency (ambulance, fire, police) call-handlers and dispatchers (EDC	8 databases were searched: Embase, PubMed, Medline, CINAHL, PsychInfo, PsychArticles, The Psychology and Behavioural Sciences Collection and Google Scholar. PICO acronym used for inclusion.	Narrative description using CASP checklist.	Limited literature base to draw from.

Author, year, country	Aim & methodology	Sampling & participant/study characteristics	Data collection methods	Data analysis methods	Limitations
		operatives) working in EDCs • Any intervention, where applicable • Comparator is either another intervention, or no intervention, where applicable • Any psychological health outcome measures in relation to working within an EDC • Any study design			
Halpern et al.[43] 2009 Canada	Characterise critical incidents experienced by ambulance workers as well as elicit suggestions for interventions.	Sample taken from 900 paramedics and 100 supervisors attending an educational workshop. N = 60, 33% female, mean age = 33 years, mean years of experience = 13.	Interviews and focus groups.	Ethnographic content analysis used. Qualitative exploratory method used to understand critical incidents from the point of view of participants.	All participants were self-selected.
Halpern et al.[44] 2009 Canada	Explore and describe Emergency Medical Technicians' (EMTs) experiences of critical incidents and views about potential interventions in order to facilitate development of interventions that take into account EMS culture.	An iterative sampling approach was used to ensure that both genders and all job levels were represented, and to identify when saturation had been reached. N = 60 (4 supervisors, 56 EMTs), 33% female, average age = 39 years, average years of experience = 13.	Focus groups and individual semi-structured interviews.	Ethnographic content analysis and constant comparative method.	Although the EMTs who volunteered to participate in the study were representative of the EMS organisation in terms of age and years of experience, the participants may have higher levels of traumatisation, more vocal, or differ in other ways to the majority of EMTs.

Author, year, country	Aim & methodology	Sampling & participant/study characteristics	Data collection methods	Data analysis methods	Limitations
Hegg-Deloye et al.[45] 2014 Canada	Identify the literature available on the effect of paramedics' jobs on their health status.	Studies were included if the experimental protocol was conducted among professional workers and included a literature review. Experimental studies with fewer than six participants, and observational studies with a questionnaire response rate below 60% were not included. Forty-eight studies were found, 25 of which were included in the review.	Electronic databases used: MEDLINE (Ovid, PubMed, National Library of Medicine) between 2000 and 2011. Key words: paramedics, emergency responders, emergency workers, shift workers, post-traumatic symptoms, obesity, stress, heart rate variability, physiological response, blood pressure, cardiovascular, and cortisol.	Not applicable.	The shifts reflected on in some studies were not as demanding as shifts when major accidents occur.
Hugelius et al.[50] 2014 Sweden	Survey ambulance managers' experiences of crisis support interventions for ambulance staff after potentially traumatic events.	Ambulance managers from ambulance stations including urban and rural areas were recruited via telephone. N = 6, gender unspecific, 1-13 years of experience.	Semi-structured interviews using an interview guide developed based on the literature and the authors' experience.	Content analysis.	The interviews were not recorded, transcription occurred via the 2 authors taking "literal notes" during the interviews. All participants were from 1 health care region.
Jonsson & Segesten[51] 2004 Sweden	Uncover and deepen the understanding of the way ambulance staff experience and handle traumatic events and to develop an understanding of the life world of the participants. Descriptive phenomenology and an interpretative Heideggerian approach.	Participants were recruited strategically to ensure a variation in terms of age, educational background, and experience as ambulance staff. N = 10, specifics of gender, age, and experience unspecified.	Interviews were audio-taped and transcribed verbatim.	Transcripts analysed using 5-step process involving: 1) reading whole interview, 2) search for meaning units, 3) synthesise meaning units, 4) organise embodiments, and 5) a general structure was verbalised.	Small sample size and minimal information regarding participants.
Klimley et al.[32] 2018 USA	Examine research regarding PTSD in police officers, firefighters, and emergency dispatchers with particular attention to the prevalence,	Eligibility criteria: 1) Sample included first responder group, 2) Study used a validated PTSD measure, 3) Participants had no	Google Scholar and PsycInfo searched between 1960 to 2018.	Narrative review of themes including prevalence, comorbid diagnoses, risk and protective factors, and	It may be difficult to recruit participants for research studies relating to PTSD, and therefore ascertain its prevalence, due to first

Author, year, country	Aim & methodology	Sampling & participant/study characteristics	Data collection methods	Data analysis methods	Limitations
	comorbid diagnoses, risk and protective factors, and resources available to each group.	indications of history of head trauma or serious psychiatric conditions. 524 articles were identified, and 218 included.	The following keywords, and combinations of these, were used in computerised databases: “PTSD”, and “police officers”, “firefighters”, “dispatchers”, “prevalence”, “comorbidities”, “risk factors”, “protective factors”, and “resources”.	resources available to each group.	responder culture and perceptions of potential occupational repercussions, skepticism and fears around confidentiality.
Larsson et al.[52] 2016 Sweden	Synthesise existing research on daily hassles in professional first responder settings into a theoretical model.	Eligibility criteria: 1) Peer-reviewed research paper, 2) Written in either English, German, Spanish, or Scandinavian languages. From an initial 678 records, 40 were suitable for inclusion.	Identical searches were conducted in the following databases: CINAHL, ERIC, Medline, PsycINFO and Sociological Abstracts (covering the whole time period of each database).	The CASP tools for qualitative and quantitative studies were used to assess the quality of the studies. Descriptive thematic analysis. The data displays were coded and codes regarded as related were combined into categories. Following this, categories were compared and superior categories were developed. Codes, categories and superior categories were constantly being checked against the data displays and the original articles.	Only one of the included studies utilised a qualitative method. The lack of intervention studies means that suggestions cannot be more specific than what has been established in the general research on work and stress. Only seven of the examined 40 studies looked at more than one group of professional first responders. This does not allow for reliable conclusions regarding sub-group differences. Despite the authors’ efforts, it is possible that not all the relevant studies were included in the review.
Lindahl[33] 2004 USA	Discuss the decision of the Virginia Supreme Court in a case in which a firefighter/ paramedic who developed	44 year old male firefighter/ paramedic with 19 years professional experience.	Not applicable.	Not applicable.	None identified by the author.

Author, year, country	Aim & methodology	Sampling & participant/study characteristics	Data collection methods	Data analysis methods	Limitations
	chronic disabling PTSD after responding to a fatal fire was initially denied benefits as he had previously reported symptoms prior to the incident.				
Mahony[57] 2005 UK	Explore the occupational stressors experienced by ambulance personnel following corporate restructuring. Ethnography.	28 ambulance personnel. Recruitment approach not specified, however part of the sample was selected by the ambulance organisation. To ensure representativeness, attempts were made to draw quotas of participants from strata by sex, geographic location, and rank.	Semi-structured face-to-face interviews, focus groups, attendance at organisational management meetings and examining information available on the public record.	All interviews were audio-recorded, transcribed, and analysed.	Part of the sample (9/28) was selected by Divisional Commanders who decided officers would be “articulate” and “ambassadors for the service”.
Mahony[64] 2001 Australia & UK	Explore the aetiology of occupational stress experienced by on-road ambulance officers.	Participants were approached in person and recruited to fill 3 quotas: rank, gender, and metropolitan/rural. 60 ambulance officers, paramedics, and patient transport officers.	Semi-structured face-to-face interviews using questions developed from previously conducted focus groups.	Interviews were tape-recorded, transcribed, and all comments coded. Recurring comments and themes were deemed to have more validity than the odd anecdotal story. Body language, pauses, reluctance to talk about a subject, and changing the subject were all noted, as was any emotive language or changes in volume.	The UK sample was less representative than the Australian sample as some of the UK sample was selected by Divisional Commanders who decided which officers would be “articulate” and “ambassadors for the service”. The UK personnel, apart from being told they were to act as ambassadors for the service in any dealings with outsiders were cautious about saying anything that could jeopardise their jobs and incomes in a very limited job market.

Author, year, country	Aim & methodology	Sampling & participant/study characteristics	Data collection methods	Data analysis methods	Limitations
Paterson et al[37] 2014 Australia	To explore factors paramedics recognise as contributors to fatigue.	Convenience sample of paramedics. N = 49, 24% female, mean age = 38 years, 12 (24%) female, 41% had been employed by an ambulance service for between 5–10 years.	Data were collected as part of the demographic questionnaire from a larger cross-sectional survey study.	General inductive approach.	Given the survey measure used, the ability to elicit detailed responses from paramedics was limited. There is no current consensus on the definition, which might have influenced responses. Participants were a relatively small sample of convenience, which might limit the external validity of the findings. In particular, differences in understanding fatigue might exist between rural and urban paramedics, or between paramedics that work in partnerships or teams, compared with paramedics who operate alone.
Pow et al.[46] 2017 Canada	To examine whether the detrimental effects of daily occupational stress on sleep quality were buffered by perceived social support availability.	Paramedics self-selected into the study in response to online media as well as flyer and brochure advertisements posted at local Emergency Medical Service stations. The advertisements directed interested paramedics to an online website where they were asked to complete an eligibility questionnaire. N = 87, 82% male, mean age = 42 years, average	Participants completed structured diaries for 7-day period along with a final online questionnaire battery.	Qualitative data (free text, open-ended survey question on workplace stressors) were summarised as the % of workdays each particular stressor was reported. Quantitative data was analysed using hierarchical linear modelling (HLM) and multiple regression.	Sleep quality was self-reported with a single item. Measuring occupational stress using an 11-item stressor checklist may not capture perceptions of the severity of the stressors being experienced. Additionally, it may not capture the full range of stressors experienced during a typical workday. The sample was relatively small and homogeneous in nature. Additionally, all

Author, year, country	Aim & methodology	Sampling & participant/study characteristics	Data collection methods	Data analysis methods	Limitations
		years of experience = 15 years.			participants were in cohabiting romantic relationships, reflecting the population of paramedics drawn from, with a majority being male and Caucasian. Thus, the generalisability of the findings may be limited to these groups. The small number of females in the sample may have rendered the study underpowered to find gender effects.
Pyper & Paterson[38] 2016 Australia	Investigate levels of fatigue, stress, and emotional trauma in rural and regional ambulance personnel.	Convenience sample of rural and regional ambulance personnel. 577 contacted. N = 134, 103M/31F, 21-60+ years old, average years of experience = 13.	Online questionnaire including both quantitative and qualitative elements.	Descriptive analysis/deductive content analysis.	Predominately male, paramedic population. Limited representation across classification of paramedics. Self-report measures were utilised.
Regehr & Millar.[47] 2007 Canada	Explore how paramedics perceive different facets of jobs including demands, degree of control, and level of support.	Convenience sample of urban paramedics. Quantitative component of research: N = 86, gender unspecified, age range 26-56 years, average years of experience = 15. Sub-sample of 17 used for qualitative interviews.	Questionnaires and interviews.	Demand/control/support model as a framework for analysis.	Gender of participants unspecified.
Regehr et al.[48] 2002 Canada	Explore the experiences of paramedics in a large urban emergency service organisation with regard to	Convenience sample of paramedics.	For the quantitative component, a variety of measures looking at exposure to traumatic events, levels of social	Open coding broad themes developed and selective coding for meaningful narrative of the experience.	Sampling for the quantitative component/ qualitative data not intended to be generalisable and

Author, year, country	Aim & methodology	Sampling & participant/study characteristics	Data collection methods	Data analysis methods	Limitations
	working with victims of violence.	N = 86, gender unspecified, 26-56 years old, average years of experience = 15.	support, and levels of distress were used. Semi-structured interviews used for the qualitative component.		specific to group and organisation.
Rice et al.[39] 2014 Australia	Examine perceptions of current physical health status and the relationships between stress level and physical health and job satisfaction, in nurses, midwives, and paramedics in Australia.	Participants were recruited by advertisements in health care and professional organisations, using a snowball selection technique. N = 24, 3M/21F, average age between groups = 39, average years of practice = 16.	Semi-structured interviews and a self-rated stress survey questionnaire collected in 2012.	Thematic analysis and descriptive statistics.	Uneven distribution of health professionals (4 paramedics, 15 nurses, and 5 midwives).
Roth & Moore[34] 2009 USA	Explore how EMS work impacts upon family life. Phenomenological approach.	Convenience sample of 12 participants (11 spouses and one parent of EMS providers). Participants were recruited from three EMS systems, 2 suburban, and 1 urban.	Semi-structured qualitative interviews.	Thematic analysis.	Small convenience sample from 3 services, but appropriate for phenomenological approach.
Skogstad et al.[60] 2013 Norway	Review the research on occupational groups that are at particular risk of developing work-related PTSD.	First selection process • Inclusion criteria: 1) Studies published in the English and Scandinavian languages • Exclusion criteria: 1) Articles on treatment and PTSD not relevant for occupational settings, 2) Studies of military personnel and of '9/11'	A literature search was conducted in the following databases: OVID MEDLINE, OVID Embase, Ovid PsycINFO, ISI Web of Science, and CSA Health and Safety Science Abstracts. Occupational search terms included 'occupation', 'employ', 'work', or 'profession'.	Not applicable.	Most studies on work-related PTSD have been cross-sectional with very low response rates, and in many of the studies, workers responded to a questionnaire where they reported symptoms and exposure levels. Risk of self-report bias in these studies, which could lead to an 'artifactual covariance between the predictor and criterion

Author, year, country	Aim & methodology	Sampling & participant/study characteristics	Data collection methods	Data analysis methods	Limitations
		• Yielded 3,525 articles from which 360 were included The second selection process: • Inclusion criteria: 1) Studies considered to have the highest scientific quality starting with longitudinal studies, systematic reviews, and cross-sectional studies with more than 100 participants. Clinical studies with more than 10 participants were also included, 2) Published in peer-reviewed journals • Yielded 140 eligible articles			variable' due to the fact that the same person is assessing both measures.
Sofianopoulos et al.[40] 2012 Australia	Identify the literature available on pre-hospital providers regarding the effects of shift work on sleep.	Articles were included if they contained information relating to sleep disturbance/ disorder, fatigue, and work-related stress in the pre-hospital setting. Articles were limited to humans and the English language; letters and editorials were excluded.	Electronic databases used were the Cochrane Database of Systematic Reviews, Ovid MEDLINE, Proquest, AMED, and CINAHL. The following MeSH terms and keywords with truncation were used in the search strategy: 'shift work'; 'sleepdisorder'; 'sleep deprivation'; 'circadian rhythm'; 'fatigue'; 'occupational stress'. Electronic databases cited 226 articles, of which nine met the inclusion criteria with another three articles	The titles and abstracts of interest were inspected to identify relevant articles with full text of selected articles retrieved. Other articles were sourced from references in the retrieved papers to identify any papers which may have been missed during the initial search process.	More detail needed on the inclusion and exclusion criteria and the way the articles were confirmed in the analysis.

Author, year, country	Aim & methodology	Sampling & participant/study characteristics	Data collection methods	Data analysis methods	Limitations
			sourced from references in the retrieved papers.		
Sterud et al.[61] 2006 Norway	Systematically explore the literature on health problems and work-related and individual health predictors in the ambulance services.	Inclusion criteria: • An original study published in a peer-reviewed journal, where an abstract was reported in the databases, in which either health status separately, or the relationship between health and stressful working conditions or individual differences in the ambulance services was accessed • The study was published after 1966 as an arbitrary limit • Among the studies addressing the relationship between stress and strain in the ambulance service, only studies not included in the previous review 49 studies were included in the review.	Several electronic databases were searched including Medline, EMBASE, PsychINFO, CINAHL, and ISI Web of Science. Other relevant sources were identified through reference lists and other relevant studies known by the research group.	Studies ranged according to level of evidence based on sample bias, lack of comparison groups, and design. Studies that compared ambulance workers using the same methods and instruments were most adequate, and prospective studies were considered most adequate.	Small sample sizes, non-representative samples, and lack of comparisons with normative data limited the interpretation of many studies.
Varker et al.[41] 2018 Australia	Explore what current evidence exists regarding the mental health and well-being of Australian emergency services personnel.	Inclusion criteria: • Australian emergency services personnel • The focus of the study was mental health or well-being • The study presented original research	Broad search of relevant databases was conducted: the PsycINFO, EMBASE, and the Cochrane Library databases were searched for relevant peer-reviewed literature 2011-2016 inclusively.	Not applicable.	No assessment of the quality of the studies, or bias in their methodologies was made for the current study, meaning that it is not possible to make judgements about the quality of research that has been conducted within this area.

Author, year, country	Aim & methodology	Sampling & participant/study characteristics	Data collection methods	Data analysis methods	Limitations
		• The study had been published since 2011 in a peer-reviewed journal • The study was published in English Initial searches identified 2,200 potentially relevant studies. 43 studies were deemed eligible for inclusion in the final map, and a further 6 were secondary publications.			
Wiitavaara et al.[53] 2007 Sweden	Explore the experience of illness and wellness in ambulance personnel with musculoskeletal symptoms. Grounded theory.	Male ambulance personnel purposefully selected from an epidemiological study focused on musculoskeletal symptoms.	Narrative interviews.	Codes were grouped based on content and emerging ideas, resulting in a number of categories, intermediate categories, and sub-categories.	All participants were male and from one ambulance service.
Wolkow et al.[42] 2015 Australia	Critique the emergency service literature that has investigated the effects of sleep restriction on hormonal, inflammatory, and psychological responses. Additionally, to investigate if a psycho-physiological approach can help contextualise the significance of such responses to assist emergency service agencies monitor the health of their personnel.	Inclusion criteria for studies: • Active duty emergency personnel / defense personnel or those in physically demanding positions which had similar sleep restriction patterns • Complete or partial sleep restriction (i.e., < 7 h sleep) from 1–8 consecutive nights • Single day or consecutive shifts with periods of restricted sleep - no specific night shifts	The following databases were searched: Allied and Complementary Medicine Database, CINAHL, Global Health, Health Source (Consumer and Nursing/ Academic Editions), MasterFILE, MEDLINE/ PubMed, PsycARTICLES, PsycBOOKS, PsycEXTRA, Psychology and Behavioral Sciences, PsycINFO, PsychTESTS and SPORTDiscus). Occupation-based key words used for the search included: ‘firefighters’, ‘fire	Not applicable.	Sleep and stress response research to date has focused mainly on soldiers and not other emergency responders or used the wider stress response literature which replicated similar sleep patterns to emergency service personnel to support discussion.

Author, year, country	Aim & methodology	Sampling & participant/study characteristics	Data collection methods	Data analysis methods	Limitations
		• Physiological stress responses pro- and/or anti-inflammatory cytokines and/or cortisol • English-language studies • Published between January 1985 and September 2013	fighters', 'fire-fighters', 'police', 'law enforcement', 'paramedics', 'ambulance personnel', 'soldiers', 'navy', 'military', and 'defense force' searched together with sleep and stress response related words of key interest that included: 'sleep deprivation', 'sleep restriction', 'cortisol', 'cytokines', 'mood', and 'psycho-physiological'.		

Appendix 3: Peer-reviewed literature - Impacts and work-related psychological and physical well-being needs

Author, year, country	Question 1: Impacts on psychological well-being	Question 2: Impacts on physical well-being	Question 4: Articulation of well-being needs
Adams et al.[35] 2015 Australia	Key impacts: decreased social life, hypervigilance, unwanted and unpredictable flashbacks and triggers as part of ongoing role, 'big brother' environment where everything is observed and taped leading to EMDs being 'on-edge'.	Fatigue.	EMDs perceive that paramedics 'see us as their punching bags' with an 'us and them' culture. On their days off, they do 'something nice', i.e., self-nurture, self-reward.
Alzahrani et al.[62] 2017 Saudi Arabia	Presumed to result in stress and anxiety and depression linked to the nature of the work.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Avraham et al.[63] 2014 Israel	Severe frustration and helplessness, terror, overwhelmed during and after the event, self-blame, projecting difficult feelings/blame onto others enabled paramedics to distance themselves from negative emotions, to alleviate emotional distress.	Not discussed/noted or the focus of the paper.	Most described focusing their thoughts on the technical activity and management procedures on the way to the event, then during the event they described experiencing emotional pain, compassion, and helplessness (in extreme situations) and emotional detachment (more routine events) and emotional, cognitive, and physical detachment from the patient's family members. Then plagued by difficult emotions and thoughts after the event, feeling helpless, terrified, and emotional detachment to prepare for going home from work. Overall, control and lack of control, compassion and detachment cycles as coping strategies. Reframed cognitively to see their work as meaningful and rewarding.
Bledsoe & Barnes[26] 2003 USA	May cause PTSD.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Bracken-Scally et al.[58] 2015	Widely acknowledged that prolonged exposure to excessive occupational demands can lead to poor physical and mental health, increased sick leave, and lower productivity.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.

Author, year, country	Question 1: Impacts on psychological well-being	Question 2: Impacts on physical well-being	Question 4: Articulation of well-being needs
Ireland	Occupations that involve a high level of stress report below average levels of physical health, psychological well-being, and job satisfaction. Stress and chronic disease in ageing and retired workers found that prolonged stress was associated with overall morbidity and numerous physical and mental illnesses. "Defined" by the occupation, and consequently, loss of occupation can lead to a profound sense of loss, boredom, and feelings of uselessness. The benefits of employment that are often missed by retirees include: (a) identity and status, (b) camaraderie and affiliation, (c) structure and routine, (d) direction and meaning, (e) personal satisfaction, and (f) intellectual stimulation and challenge.		
Chappell & Mayhew[36] 2009 Australia	NOTE: Impact was examined using quantitative methods. The qualitative component of the study focused on the nature of the events experienced by ambulance officers. Participants spoke of a variety of incident types. Most were perpetrated by patients; however, some were by other ambulance officers: *Other ambulance officers:* • Bullying from another ambulance officer • Time off work after being physically and sexually assaulted by another ambulance officer *Patients/patients' families/bystanders*: • Verbally and/or physically threatened (including with weapons), having furniture thrown at them, being sexually assaulted, being bitten, being chased, being held captive,	Not discussed/noted or the focus of the paper.	"Need more of a culture to discuss this in the industry as a whole, particularly in the ambulance service. We need to take violence more seriously and not brush over it". Participants suggested the following violence prevention strategies: Continued flagging of dangerous addresses, duress alarms, increasing police presence at incidents, enhancing officers' knowledge in violence minimisation strategies, improved training to deal with aggressive patients (current training is inadequate). Authors suggest that the needs of patients have been prioritised over the protection of staff.

Author, year, country	Question 1: Impacts on psychological well-being	Question 2: Impacts on physical well-being	Question 4: Articulation of well-being needs
	going to remote communities alone despite there being a high rate of violence Particular cases pose a higher risk of violence than others (e.g. domestic violence incidents, mental health cases, certain geographical locations, drug and alcohol intoxication, young males). Verbal abuse was seen as an almost "normal" part of the job, but "never" followed up if ambulance officers report it. In most cases, there were no consequences for the perpetrator unless police were called or already at the scene. Quantitative summary: Ambulance officers had higher levels of stress than the general population, with those from rural areas demonstrating higher scores than those from urban areas. Higher number of incidents attended was associated with higher stress levels. Sample size too small to measure statistical significance.		
Clompus & Albarran[54] 2016 England	Discussed the impact of distressing cases that may lead to compassion fatigue, compartmentalisation, or distancing emotionally from the patient. Organisational stresses and key performance requirements such as quotas, and standards such as response times and expectations as part of the job that must be managed and requires resilience.	Not discussed/noted or the focus of the paper.	Four strategies: • Organisational strategies put in place by the organisation, such as visits by team leader to see how they are coping • Informal support from peers and use of humour • Detaching and blocking as an individual • External supports came from family and friends or by referring themselves to an outside agency such as their GP
Coxon et al.[55] 2016 England	Fatigue, stress, difficulty switching off, high rates of sickness and days absent. Rates twice as high as other healthcare professionals.	Fatigue, poor work-life balance, poor post-shift recovery.	EMDs perceive that paramedics see "us and them" culture.

Author, year, country	Question 1: Impacts on psychological well-being	Question 2: Impacts on physical well-being	Question 4: Articulation of well-being needs
Donnelly & Bennett[27] 2014 USA	Possible PTSD due to exposure to critical incidents. Noted that it can be cumulative or the impact not felt for several months. Hence, the questionnaire asked them to recall as far back as 6 months. Males report more critical incidents and stress than women, but there is no difference in levels of PTSD.	Not discussed/noted or the focus of the paper.	In the qualitative component of the study, participants listed these additional critical incidents to the ones provided in the questionnaire. Critical incident stress inventory for EMS: • Encountered a child that had been accidentally killed • Encountered a child that had been murdered • Encountered an elderly person who was severely abused or neglected or in dire need of medical attention because of abuse or neglect • Encountered a patient who was severely burnt • Encountered a suicide victim • Encountered a drowning victim • Was assaulted by a patient • Present when a fellow EMT/Paramedic or other first responder was seriously injured; or first responder was killed • Was in a serious accident with an ambulance or other emergency response vehicle
Donnelly & Siebert[28] 2009 USA	Can lead to stress-related disorders that have either a mental or physical impact and higher than general public levels of alcohol and drug abuse. Evidence suggests that EMTs' rate of alcohol and drug abuse accelerates following exposure to critical incidents. Insufficient evidence to comment if subculture has a role in rates and impact. PTSD has been studied more than other impacts; e.g. depression, other anxiety disorders. Also explored PTSS and suggests a	Notes that there is an impact on physical health but does not list any specific outcomes.	Not discussed/noted or the focus of the paper.

Author, year, country	Question 1: Impacts on psychological well-being	Question 2: Impacts on physical well-being	Question 4: Articulation of well-being needs
	continuum between PTSD and PTSS which acknowledges that symptoms may be the same.		
Dropkin et al.[29] 2015 USA	Not discussed/noted or the focus of the paper.	Major physical issues are musculoskeletal. Weight of the patient and manual handling. Blood-borne pathogens. Needle stick injuries mostly with inexperienced EMTs.	Organisational and psychosocial factors related to incident injuries or illnesses. Importance of each of the following in relation to developing injuries or illnesses: • Lack of choice in choosing partner (100%) • Pre-employment screening and agility testing (100%) • Provide referral sources to medical doctors (97%) • New or inexperienced partners (93%) • Provide an effective policy for reporting injuries (89%) • Ambulance design (88%) • Missing scheduled meal and restroom breaks (73%) • No batteries for power stretchers (70%) • Poor organisational social support (69%) • Shift longer than 12 hours (62%) • Maintenance checks on all equipment (48%) • Training, proper resources/assistance in the field (41%) • Second job (35%) • No control over work environment (33%) • Lack of backup support/crew (27%) • Lack of good or updated equipment
Flannery[30]	Can lead to PTSD.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.

Author, year, country	Question 1: Impacts on psychological well-being	Question 2: Impacts on physical well-being	Question 4: Articulation of well-being needs
2015 USA			
Forslund et al.[49] 2004 Sweden	Creates stress, anxiety, and uncertainty.	Not discussed/noted or the focus of the paper.	Need for training.
Gallagher & McGilloway[59] 2008 Ireland	Critical incidents that are of significance were the death of a baby, suicide, and grotesque mutilation. Impacts included angry outbursts, sleep problems, recurring dreams and nightmares, an increase in alcohol consumption, feeling alienated from other people, and an inability to relax. Many also described feelings of despondency, intrusive thoughts of the incidents, and flashbacks, while some others said that they had become irrational, and over-protective due to the high levels of stress they encountered in the course of their work. Impact can be cumulative and/or delayed and lead to long-term sick leave. EM Callers reported lack of control over their work, particularly when had traumatic events and callers got criticised by other first responders (police, fire, and paramedics) and by the public.	Impact of CIS on physical health included weight gain, back problems, and lack of appetite. Many respondents reported that it was difficult for them to maintain or improve their general levels of fitness because of shift work and the lack of on-site exercise facilities. Smoking-related illnesses due to an increase in their smoking habits. A sub-theme emerged, related to the effect on family relationships. Over half of the interviewees (14/27) mentioned that their personal relationships and home lives had been negatively affected due to work-related stress. Some reported having 'angry outbursts' at home after a stressful day, or not being able to talk to their partners about distressing incidents. The long working hours and shift work also reduced the amount of time they spent with their family.	Not discussed/noted or the focus of the paper.
Gist & Harris Taylor[31] 2008 USA	Can produce stress and PTSD.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Golding et al.[56] 2017	Feelings of being out of control. Physical layout impacts on control.	Not discussed/noted or the focus of the paper.	Need for quality supervision. Need managers who are closer to them in working relationship.

Author, year, country	Question 1: Impacts on psychological well-being	Question 2: Impacts on physical well-being	Question 4: Articulation of well-being needs
England	Lack of control and knowledge of outcomes. Vicarious trauma and burnout stress. PTSD results at high levels, and high levels of sick leave. Strong emotional attachment to their job as a public service.		Conflict between workers not managed by supervisors. Seek social support from peers, family, and friends. Used black humour.
Halpern et al.[43] 2009 Canada	May lead to PTSD, and in many cases, leads to emotional responses, burnout. Critical incidents may lead to somatic symptoms (e.g. headaches, gastrointestinal distress), sleep disruption, sadness, avoiding thoughts or situations, intrusive memories, anger at the organisation, irritability, job dissatisfaction, social withdrawal, relationships affected negatively, loss of compassion, and substance abuse.	Mentioned, but not identified.	Need for education, training, supervisor support.
Halpern et al[44] 2009 Canada	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Participants highlighted the importance of supervisor support and a timeout period immediately following a critical incident. Participants provided the following suggestions to help in dealing with critical incidents: Education for EMTs, supervisors, and their families on recognising signs of critical incident stress. Addressing barriers to support by education about stigma in the workplace and improving supervisors' capacity to reach out to EMTs. Improving chronic workplace stressors. The introduction of morbidity and mortality rounds (non-judgemental format for feedback on difficult cases commonly used in medicine).

Author, year, country	Question 1: Impacts on psychological well-being	Question 2: Impacts on physical well-being	Question 4: Articulation of well-being needs
Hegg-Deloye et al[45] 2014 Canada	A high proportion of EMS shift workers reported work stress, low job satisfaction, and poor mental health.	Fatigue and poor physical health were reported by a high proportion of EMS shift workers.	Not discussed/noted or the focus of the paper.
Hugelius et al[50] 2014 Sweden	Ambulance personnel face potentially stressful events and regular exposure to traumatic situations that could injure or have an emotional effect on the individual (depression, irritability). Other reactions included reduced compassion or losing their tempers. These reactions were associated with the lack of crisis support interventions after traumatic events and ambulance staff ‘‘collecting’’ negative emotions and experiences with a limited possibility for mental health recovery.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Jonsson & Segesten[51] 2004 Sweden	The structure of a traumatic experience described as a six-fold experience that begins before the traumatic event occurs and ends with handling and recovery. The pre-trauma experience is characterised by the use of an “inner dialogue” for preparing oneself, and to prevent stress and increase one’s alertness by visualising what might be faced, even though it may be unknown and therefore impossible to fully prepare for. Recognising that it could have been their family or themselves as the victims, resulting in feelings of anxiety. Fear of failing in their responsibilities, they articulate feelings of vulnerability and isolation, and difficulty in distancing themselves from the patient or their family. The risk of making mistakes and the fear of misjudging or of failing in their desire to help the patient. Feeling insufficient and worthless even if	Participants reported being so overwhelmed by their emotions that they get physical sensations such as feeling sick or fainting during a traumatic situation. Just being there with the patient in a traumatic situation demands a lot of self-possession and strength that can cause feelings of fatigue.	All the respondents thought that to handle a traumatic experience, it was necessary to have someone (either colleagues or others) to share the worries with and talk to about their feelings. The need for someone to talk to was usually instant and urgent. Some of the participants indicated that it was necessary to hand over all the anxiety to someone who could hold and enclose it.

Author, year, country	Question 1: Impacts on psychological well-being	Question 2: Impacts on physical well-being	Question 4: Articulation of well-being needs
	they have done everything possible to help and support the patient and family. Be professional and hide their anxiety/emotions and try to convey comfort and calmness. The challenge of containing emotions and not being able to distance themselves (from the event) makes it more difficult to leave it behind. Before leaving the scene, initial feelings and evaluation of how they are going to cope. After handover or completion of the scene, they can feel confused, upset, exhausted, sad, and distressed, and that the world is chaotic. Intensity and duration of these feelings varies considerably. The intensity of feelings varied a great deal, from over-powering feelings of chaos to reflection over what had actually happened. Other more subtle feelings included being rejected by relatives or fellow workers, feelings of anger, frustration, resentment and bitterness, betrayal and rejection, self-loathing, guilt and humiliation, being out of control, trapped, and feelings of helplessness. Overwhelmed by feelings that they cannot escape from characterised by confusion and chaos, loss of control, and isolation from the world, intrusive memories, and a sense of unreality. Post-traumatic stress disorder symptoms included: re-experiencing the trauma, numbing of compassion and distortion in social or professional performance, and symptoms of increased arousal. Trying to hide feelings or appearing stoic. For some, feelings and memories were so prevalent that they dominated their normal life. Re-experiencing occurred most commonly in the form of nightmares and flashbacks that continually developed into traumatic memories.		

Author, year, country	Question 1: Impacts on psychological well-being	Question 2: Impacts on physical well-being	Question 4: Articulation of well-being needs
	Feelings of guilt, shame, and self-loathing. The feelings of guilt appeared even if they knew that they did everything possible to help and support the patient. The most shameful thing for some of the participants is not that they failed in caring or giving attention to the patient, but that they were so overwhelmed by all the impressions from the scene of the accident. Self-impression that they could work well under pressure and would cope with high levels of stress and that nothing could shake them. Terrified, suffer from sleeping disturbance, nightmares, intrusive memories. Feelings of uselessness, shortcomings, and powerlessness, and how others see them. Strong expressions of isolation and feelings of a lack of understanding from their closest social network.		
Klimley et al[32] 2018 USA	Exposure to potentially traumatic calls has been shown to increase anger outbursts, nightmares, flashbacks, alcohol use. Adams et al. (2015) conducted semi-structured interviews with 16 emergency medical dispatchers to explore their levels of stress and overall well-being. They found that organisational and administrative difficulties exacerbated dispatchers' negative feelings (e.g., powerlessness, failure/lack of control), sleeping difficulties, substance use, emotional numbness, hyperarousal, and isolation).	Organisational and administrative difficulties exacerbated dispatchers' sleeping difficulties.	Not discussed/noted or the focus of the paper.
Larsson et al[52] 2016 Sweden	It is not only the frequency and intensity of the everyday reactions that matters, but also the personal significance ascribed to what is happening.	Not discussed/noted or the focus of the paper.	Problem-focused coping: differences were observed between different hierarchical levels. At the lower end of the organisations, examples of problem-focused efforts included taking measures to uphold one's own security and to omit from safety procedures in order not to provoke. Informants higher up in the hierarchy reported strategies like demanding resources

Author, year, country	Question 1: Impacts on psychological well-being	Question 2: Impacts on physical well-being	Question 4: Articulation of well-being needs
			from their superiors and developing plans of action. Emotion-focused coping: favourable thoughts and actions were reported in addition to passive and avoidant strategies. One example involves constructive emotional confrontation, for example seeking information as a sort of feedback on the outcome of a stressful situation. Examples of emotional distancing include to put feelings aside and to not dwell on things, to joke, to change the subject, and to be professional and focus on the task assignment.
Lindahl[33] 2004 USA	Years after the critical incident, firefighters/paramedics continue to suffer from PTSD and major depression with suicidal ideation. Symptoms include: terrifying intrusive thoughts, exaggerated startle response, and memories of emergency calls going back throughout career, triggered by such stimuli as the sound of sirens or certain smells; attempts to avoid the thoughts by staying at home and in bed, avoiding the newspaper, television, and friends; excessive sleep (up to 20 hrs a day); intense and disturbing nightmares; mental confusion and memory loss; halting and stuttering speech; the inability to concentrate or read; and a loss of the experience of pleasure in any activities. Despite medication, hospitalisation, electroconvulsive therapy and treatment from a psychiatrist and psychologist, treating professionals believe unlikely ever to work again.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Mahony[57] 2005 UK	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.

Author, year, country	Question 1: Impacts on psychological well-being	Question 2: Impacts on physical well-being	Question 4: Articulation of well-being needs
Mahony[64] 2001 Australia & UK	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Paterson et al.[37] 2014 Australia	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Pow et al.[46] 2017 Canada	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Pyper & Paterson[38] 2016 Australia	Stressors included treating personally known patients, working with children, critically ill patients, the death of patients, community expectations, 'office politics' (including paperwork, colleagues, and management), fatigue, working as a single officer, and longer response times due to travel distances. Majority of rural and regional ambulance personnel reported normal levels of stress. It may be the case that working with known individuals in a community offers some degree of 'protective' impact for rural and regional ambulance personnel, at least in terms of stress.	Negative effects of being on-call for healthcare worker's sleep and clinical performance.	Not discussed/noted or the focus of the paper.
Regehr & Millar[47] 2007 Canada	Paramedics in this study perceived that the amount of work they were assigned was excessive. Clear association between control, self-efficacy, and distress. Paramedics identified the fast pace of work, the excessive amount of work, and the emotional intensity of their work as stressors/work environment as being high in demand, low in control, and low in support.	Interaction between demands of work pace and the psychological demands of dealing with tragic situations, leaving little time for physical rest or psychological processing of tragic encounters.	Not discussed/noted or the focus of the paper.

Author, year, country	Question 1: Impacts on psychological well-being	Question 2: Impacts on physical well-being	Question 4: Articulation of well-being needs
Regehr et al.[48] 2002 Canada	Secondary/vicarious trauma. Trauma can be cumulative and/or caused by smaller significant events. Intrusive imagery, generalised fears, sleep disturbances, a changed worldview, and affective arousal – the result of empathic engagement between the worker and the client. Exposed to at least one of the listed critical incidents during the course of their career, including the death of a colleague, injury on duty, mass casualties, or the death of a child. The most commonly reported events defined by respondents as traumatic for themselves were suicides and violence against children. In cases of child abuse and neglect in particular, they were able to recall in specific detail aspects of the victim and of the environment in which he or she was found. Dealing with the grief/violence directed toward themselves was not described by respondents as traumatic. IES scores reveal that 25.5% of the 86 respondents fell into the severe or high range of post-traumatic symptoms, and 14% into the moderate range, while 44.2% fell into the low range of symptoms. Depression/alcohol-related problems/arousal symptoms, such as anger and fear; and avoidance symptoms, such as emotional blunting/tearfulness, shortness of breath, flashbacks, and night terrors/exposed worker at times felt disengaged and emotionally distant from family members. Coping strategies:	Not discussed/noted or the focus of the paper.	Reduced capacity to handle stressful events, depression, and substance use. Although many of the responders described the use of alcohol as a short-term coping strategy, there was a recognition that this, at times, became problematic.

Author, year, country	Question 1: Impacts on psychological well-being	Question 2: Impacts on physical well-being	Question 4: Articulation of well-being needs
	• Cognitive focus (conscious process of emotionally distancing themselves and ensuring that they did not become emotionally attached to the victim or the victim's family) • Thick skin to a lot of the calls, as a protective mechanism • Need to obtain information about the situation after • In order to cope with the lack of control over the job, ensured that other aspects of life were in control and that family was prepared for possible disaster		
Rice et al.[39] 2014 Australia	High job demands, intensity in care delivery, job burnout, and loss of staff due to health issues, have resulted in a continuum of health disruption for practitioners. The prevalence of overweight and obesity has been reported in healthcare workers. Fifty percent of a paramedic's shift is spent sitting, contributing to obesity. Stress at the forefront of care delivery, and the effects of stress impacted on participants' physical health.	Increased incidence of musculoskeletal injuries among healthcare workers. Factors contributing to poor physical health are long hours and shift work, resulting in fatigue and exhaustion, impacting upon clinical decision-making and workplace responsibilities. Chronic fatigue levels in paramedics are at a peak and were found to be significantly higher than three groups of non-clinical shift workers, and their opportunities for physical activity are restricted due to roster. Physical health was perceived as more than the physical capability to perform at work. Concerned about the quality of their diet because fast-paced work demands compromised their eating habits. A connection between physical health and job satisfaction to subsequent retention in their profession. Physical health consistently acknowledged as important, albeit expected levels of physical activity were not within recommended guidelines.	Not discussed/noted or the focus of the paper.

Author, year, country	Question 1: Impacts on psychological well-being	Question 2: Impacts on physical well-being	Question 4: Articulation of well-being needs
Roth & Moore[34] 2009 USA	Providers are exposed to high stress situations on a routine basis and often face challenging environmental forces, violent patients, or aggressive bystanders on scene, shifts, overtime. shift rotations, and call volumes. Negative interactions at work on family functioning, there is evidence that personal coping resources may mediate the impact of stress on the family. The nature of emergency services work, EMS personnel are particularly vulnerable to the effects of work stress and trauma: • *Shiftwork, Holidays, and Social Life "Just Not Being Able to Go"* Shift work impacted the individuals and family's social life at other times of the year and how operating in a "9 to 5 world" could be problematic • *Changes in Marital and Parental Roles: "The Demands of His Job"* Shift work forced changes in family roles, with a few mentioning adjustments to marital roles and more addressing parental roles. Challenges with intimacy • *The Rhythms of Home Life: "There's No Set Scheduling"* Shift work was disruptive to the schedule and rhythms of home life • "Sometimes I kid with him and I call myself the 'EMS widow' because that's my sacrifice in understanding that he needs sleep" • *Concerns about Physical Safety and Job Risks*	Not discussed/noted or the focus of the paper.	Coping with the Impact of EMS Work on the Family System. Cope with the impact of EMS work by employing the following - emotional support, positive thinking to manage stressors, negotiating family responsibilities, seeking social support from others, and developing their own interests. Provision of emotional support to their EMS family member through talking and listening or giving their family member "space" to de-stress as coping strategies. Cognitive Strategies: *"Go with the Flow" while "Looking at the Worst Possible Scenario".* *Seeking Social Support: "Cultivate Those Friendships".* *Negotiating Family Role Responsibilities: "How to Balance Each Other".* *Developing Your Own Interests: "I Do Yoga; I'm Also a Writer".*
Skogstad et al.[60] 2013 Norway	PTSD 'arises as a delayed or protracted response to a stressful event or situation (of either brief or long duration) of an exceptionally threatening or catastrophic nature, which is likely to cause pervasive distress in almost anyone'.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.

Author, year, country	Question 1: Impacts on psychological well-being	Question 2: Impacts on physical well-being	Question 4: Articulation of well-being needs
	Risk of developing PTSD depends on the nature of the critical incident, the individual's personality and life history, and events that may occur in the aftermath of the trauma. Social support, mainly emotional support, has been shown to be protective against the development of PTSD. Co-morbidity between PTSD and disorders such as depression, anxiety, and substance abuse. Ambulance personnel are frequently exposed to critical incidents and generally report more health problems. PTSD prevalence in some studies has been close to 20%. Lack of social support, unacceptable organisational conditions at work, and individual factors have been associated with more PTSD symptoms. Suffer from persistent stress symptoms as a result of frequent exposure. Increased risk of being exposed to traumatic events through their daily work. Individual differences in vulnerability and resilience appear to be important factors for the intensity and duration of trauma-related symptoms experienced in the aftermath. Nature of the trauma is also an important factor; for example, dealing with child victims is known to be particularly distressing.		
Sofianopoulos et al.[40] 2012 Australia	Continuing growth in the caseload predicted, risk of sleep disturbance, fatigue, normal circadian rhythm and sleep hygiene is continually challenged with increased workloads. Sleeping problems, headache, and stomach symptoms. Health complaints were associated with the psychological demands of the job.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.

Author, year, country	Question 1: Impacts on psychological well-being	Question 2: Impacts on physical well-being	Question 4: Articulation of well-being needs
	Scottish ambulance personnel attributed burnout to less job satisfaction, longer time in service, less recovery between incidents, and more frequent exposure to incidents.		
Sterud et al.[61] 2006 Norway	Ambulance workers have a higher standardised mortality rate, higher level of fatal accidents, higher level of accident injuries, and a higher standardised early retirement on medical grounds than the general working population and workers in other health occupations. Prevalence of post-traumatic stress symptom >20% in five of seven studies, and similarly high prevalence rates were reported for anxiety and general psychopathology in four of five studies. Prevalence of PTSD symptoms is consistently high.	Job conditions and psychological demands were significantly associated with more sleeping problems, headache and stomach symptoms, and problems with the neck, shoulders, and knees. In a study from the UK, ambulance workers (n = 52) reported more physical health problems on average (15.1 v. 13.8) than the general working population.	Not discussed/noted or the focus of the paper.
Varker et al.[41] 2018 Australia	Organisational factors are the most commonly researched as they relate to mental health problems and/or well-being.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Wiitavaara et al.[53] 2007 Sweden	Vulnerability, and a feeling of helplessness, when witnessing the horrible scenes. Situations involving children were always perceived as hardest to handle. A balance between becoming too vulnerable and becoming hardened.	The work of ambulance personnel involves a heavy physical workload and the strain of irregular hours. Situations that demand instant alertness, working under time pressure, and handling severe situations involving human suffering and death. Described bodily illness mainly from the lower and upper back and from the neck/shoulder region, but also from the knees and wrists.	Striking a balance. The experience of illness and wellness were considered part of the work. Accepting and handling the present illness was important to their framing of what wellness meant Sub-themes were: Attaining and maintaining wellness through nurturing; Encountering illness as an experience and a threat; and Accepting and handling illness. Wellness was nurtured by the experiences of *Getting excitement and being challenged; Having freedom and flexibility; Being "someone" and making a difference; and Being one of the gang*. Self-determination to make one's own decisions and to build rapport with the individual

Author, year, country	Question 1: Impacts on psychological well-being	Question 2: Impacts on physical well-being	Question 4: Articulation of well-being needs
			patient and provide individually-tailored care were crucial to wellness. Flexibility in work environment and tasks. Being ‘‘someone’’ and making a difference was a third aspect of nurturing and being nurtured. Being ‘‘someone’’ meant being visible, centre stage, as it were; being in the limelight. It also meant being the rescuer, the hero, in a crisis situation. Uniform as a part of identity and making a difference to others. Illness can be encountered as an experience and a threat. The illness experience had a physical, psychological, and social dimension encapsulated by: • The body makes itself heard • One can get worn out • One can become too vulnerable or hardened
Wolkow et al.[42] 2015 Australia	Paramedic personnel in Australia were found to have a higher prevalence of sleep-related mental health outcomes (i.e., depression and anxiety). Evidence suggests that an increase in stress exposure simultaneously induces both physiological (i.e., higher and flatter diurnal cortisol levels and/or abnormally high or low cytokine levels) and psychological changes (i.e., mood and behavioural disturbances), and that these responses can be positively or negatively correlated with one another. Depressive symptoms increased as subjective sleep quality deteriorated.	Periods of partial and total sleep deprivation/restriction can impair immune function (e.g., above and below normal pro- and anti-inflammatory cytokine levels), hormone secretion (e.g., higher and flatter diurnal cortisol levels) and instigate adverse psychological changes (e.g., symptoms of anxiety and depression). Inadequate or disrupted sleep has been associated with cardiovascular and metabolic diseases and depression. Elevated levels of sleep regulating cytokines interleukin (IL)-6, IL-1β and TNF-α have been positively associated with CVD, metabolic syndrome, and depression. Higher, flatter diurnal cortisol patterns have been related to depression.	Not discussed/noted or the focus of the paper.

Author, year, country	Question 1: Impacts on psychological well-being	Question 2: Impacts on physical well-being	Question 4: Articulation of well-being needs
		Elevated morning cortisol levels measured in plasma have also been positively associated with CVD and metabolic syndrome-related features (e.g., glucose intolerance, insulin sensitivity, hypertension, atherosclerosis). Both increases and decreases in cortisol level have been demonstrated following stress exposure and could indicate allostatic load (i.e., wear and tear) on the endocrine system expressed as either an intensified or suppressed cortisol production. Sleep restriction studies have demonstrated an increase in daily cytokine levels. The literature indicates that pro-inflammatory cytokines IL-6, IL-1β, IL-1ra and TNF-α significantly increase or decrease from baseline following single as well as multiple nights of complete and partial sleep restriction.	

Appendix 4: Peer-reviewed literature - Help-seeking and access to supports

Author, year, country	Question 3: Role of stigma, self-stigma	Question 5: How symptoms are reported & identified	Question 6: Other influences on help-seeking
Adams et al.[35] 2015 Australia	'Culture of cover-up' and they don't then ask for help. Humour is often used as a distraction technique to deal with shock.	EMDs sought unofficial debriefing with colleagues and family, which was concerning re: vicarious trauma potential and then for others, especially family members.	EMDs perceived as less important than frontline staff; less exposed to trauma i.e., Impact on them not understood enough by others. In the 'cover-up' culture, they are expected to 'get over it'.
Alzahrani et al.[62] 2017 Saudi Arabia	The low referral rate to the psychological support unit was assumed to be due to lack of privacy.	Not discussed/noted or the focus of the paper.	Privacy, confidentiality, ease of referral.
Avraham et al.[63] 2014 Israel	'Tough guy' mentality, being in control on the way and during the event. Where they experienced lack of control, this undermined their professional identity, self-image, and	They review and restructure the event either individually or with colleagues, reframing it and then just get on with their day.	Not discussed/noted or the focus of the paper.

Author, year, country	Question 3: Role of stigma, self-stigma	Question 5: How symptoms are reported & identified	Question 6: Other influences on help-seeking
	confidence, leading to stress, helplessness, anger, and guilt.		
Bledsoe & Barnes[26] 2003 USA	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Identifies that CISD is harmful, with no RCTs in support of the approach. Research suggests it is harmful and should not be used.
Bracken-Scally et al.[58] 2015 Ireland	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Chappell & Mayhew [36] 2009 Australia	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Clompus & Albarran[54] 2016 England	Female paramedics used medication to deal with their stress levels and indicated they were embarrassed by this. They also used their GP.	Paramedics seek peer support, support from family and friends, go to their GP, or to what was referred to as occupational health.	Not discussed/noted or the focus of the paper.
Coxon et al.[55] 2016 England	Not discussed/noted or the focus of the paper.	Some used their family to debrief, appropriate training, going out as a 3rd so the paramedics knew them and were more accommodating, making clear distinction between home and work life.	There was no discussion on accessing mental health support.
Donnelly & Bennett[27] 2014 USA	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Donnelly & Siebert[28]	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.

Author, year, country	Question 3: Role of stigma, self-stigma	Question 5: How symptoms are reported & identified	Question 6: Other influences on help-seeking
2009 USA			
Dropkin et al.[29] 2015 USA	Not discussed/noted or the focus of the paper.	Not discussed, but it was noted that managers were inclined not to believe paramedics. Paramedics wanted to go to their own doctor, and not one assigned by the service.	Not discussed/noted or the focus of the paper.
Flannery[30] 2015 USA	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Forslund et al.[49] 2004 Sweden	Not discussed/noted or the focus of the paper.	Only symptom mentioned was increased adrenaline levels.	Not discussed/noted or the focus of the paper.
Gallagher & McGilloway[59] 2008 Ireland	Not discussed/noted or the focus of the paper.	Symptoms include angry outbursts, sleep problems, recurring dreams and nightmares, an increase in alcohol consumption, feeling alienated from other people, and an inability to relax. Many also described feelings of despondency, intrusive thoughts of the incidents, and flashbacks, while some others said that they had become irrational and over-protective due to the high levels of stress they encountered in the course of their work. Impact can be delayed and lead to long-term sick leave, and can also be cumulative.	Lack of support from management. Distrust in confidentiality. Distrust in competence of counsellors. Lack of capacity of management to deal with workplace conflict.
Gist & Harris Taylor[31] 2008 USA	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Identifies that CISD is harmful, with no RCTs in support of the approach. Research suggests it is harmful and should be used with caution.
Golding et al.[56] 2017	Not identified although said the public not aware of their work.	Lack of work-life balance. Cynicism about peer support systems.	Not discussed/noted or the focus of the paper.

Author, year, country	Question 3: Role of stigma, self-stigma	Question 5: How symptoms are reported & identified	Question 6: Other influences on help-seeking
England			
Halpern et al.[43] 2009 Canada	Mentioned, but not explored.	Not identified although said the public not aware of their work.	CISB critical of it as not necessarily as effective. Paramedics definition of critical incidents differs from DSM, but close to Mitchell ("any situation faced by emergency personnel that causes them to experience unusually strong emotional reactions which have the potential to interfere with their ability to function either at the scene or later", p.174).
Halpern et al[44] 2009 Canada	One of the reasons provided for not accessing the mental health support services offered by the organisation (staff psychologist, employee assistance team made up of fellow EMTs) was fear of stigmatisation. A fear of stigma and appearing weak was identified as a barrier to requesting support from supervisors after a critical incident (organisational culture stigmatises emotional vulnerability). For many EMTs, the stigma is so firmly entrenched in the culture that it remains unrecognised and unchallenged.	Participants reported symptoms being identified in themselves, in peers, and by supervisors.	Interviewees did not often use mental health support services offered by the organisation (staff psychologist, employee assistance team made up of fellow EMTs). Explanations for this included concerns about confidentiality, expectation of lack of professional competence, fear of stigmatisation, and difficulty accessing the resources.
Hegg-Deloye et al.[45] 2014 Canada	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Hugelius et al.[50] 2014 Sweden	Not discussed/noted or the focus of the paper.	Ambulance managers reported that it can be challenging to identify when, and for whom, crisis support interventions were needed.	Not discussed/noted or the focus of the paper.
Jonsson & Segesten[51] 2004	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.

Author, year, country	Question 3: Role of stigma, self-stigma	Question 5: How symptoms are reported & identified	Question 6: Other influences on help-seeking
Sweden			
Klimley et al.[32] 2018 USA	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Larsson et al.[52] 2016 Sweden	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Lindahl[33] 2004 USA	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Mahony[57] 2005 UK	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Mahony[64] 2001 Australia & UK	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Paterson et al.[37] 2014 Australia	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Pow et al.[46] 2017 Canada	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Pyper & Paterson[38] 2016 Australia	Not discussed/noted or the focus of the paper.	Fatigue can contribute to errors in drug calculations and administration, slow reaction times, poor driving ability, poor decision-making ability, and poor concentration. The most commonly reported errors were related to drug	Not discussed/noted or the focus of the paper.

Author, year, country	Question 3: Role of stigma, self-stigma	Question 5: How symptoms are reported & identified	Question 6: Other influences on help-seeking
		administration and calculation errors, driving accidents, and falling asleep at the wheel.	
Regehr & Millar[47] 2007 Canada	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Friends and colleagues were very supportive or often supportive. High degree of social and emotional integration among their co-workers, especially with their work partners. Low degree of social cohesion and integration in the overall work group. Perceptions of employer support were contrastingly low.
Regehr et al.[48] 2002 Canada	Not discussed/noted or the focus of the paper.	82% of the participants indicated that they had been overwhelmed or deeply disturbed by an incident or incidents. Paramedics reporting that they had experienced distress had significantly more years of service than those who did not. Although 69.8% of respondents reported being the victims of violence on the job, and 55.8% reported that they had near-death experiences, only 30.0% and 48.8% of these respondents, respectively, reported significant distress as a result.	Not discussed/noted or the focus of the paper.
Rice et al.[39] 2014 Australia	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Roth & Moore[34] 2009 USA	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Skogstad et al.[60] 2013 Norway	Unwillingness to seek help for psychological problems. This may be due to a 'macho culture' which includes having difficulties admitting weakness, denial, and/or a constant pressure to	Not discussed/noted or the focus of the paper.	Unwillingness to seek help for psychological problems. This may be due to a 'macho culture', which includes having difficulties admitting weakness, denial, and/or a constant pressure to

Author, year, country	Question 3: Role of stigma, self-stigma	Question 5: How symptoms are reported & identified	Question 6: Other influences on help-seeking
	control emotions and a desire to appear efficient.		control emotions and a desire to appear efficient.
Sofianopoulos et al.[40] 2012 Australia	Not discussed/noted or the focus of the paper.	Rural and urban ambulance workers from the Netherlands were involved in a longitudinal study using standardised measures to obtain an insight into chronic stressors and health symptoms, specifically post-traumatic stress reactions, burnout, and fatigue. Fatigue levels that were 'at risk' of sick leave or work disability. Work stress often associated with the perceived lack of control and feelings of powerlessness and inability to change or influence management of their working conditions.	Not discussed/noted or the focus of the paper.
Sterud et al.[61] 2006 Norway	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Varker et al.[41] 2018 Australia	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Wiitavaara et al.[53] 2007 Sweden	Not discussed/noted or the focus of the paper.	The experience of getting worn out by irregularity was described as tension and difficulties in relaxing, loss of a sleep rhythm, remaining tired, and nausea due to sleep loss and frequent interruptions of sleep. They also experienced lowered motivation and increasing difficulties to get started at night, as well as the beginnings of indigestion and headaches. Performing inner reasoning to reach acceptance and handling illness as an experience and a threat. Self-repositioning, stretching, and self-medication were often used to handle bodily illness.	Not discussed/noted or the focus of the paper.

Author, year, country	Question 3: Role of stigma, self-stigma	Question 5: How symptoms are reported & identified	Question 6: Other influences on help-seeking
Wolkow et al.[42] 2015 Australia	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.

Appendix 5: Peer-review literature - Impacts of organisational and systems parameters

Author, year, country	Question 7: Effects of workflow & nature of work on mental health and well-being	Question 8: Effects of organisational structures on psychological and physical well-being
Adams et al.[35] 2015 Australia	When EMDs can follow-up with paramedics to get closure/find out what the outcome was, both were better at coping with events.	Including EMDs alongside paramedics in debriefs helped them feel valued, have psychological closure, and feel heard and understood by each other. EMDs said they rarely get positive feedback from managers and paramedics or the service; only feedback when something goes wrong. The dispatcher role is often to enforce unpopular management rules and regulations, which creates division among the service types.
Alzahrani et al.[62] 2017 Saudi Arabia	Not discussed/noted or the focus of the paper.	This paper noted that the third intervention when the referral process is directly between the employee and the counselling service within 6 weeks numbers increased.
Avraham et al.[63] 2014	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Bledsoe & Barnes[26] 2003 USA	Not identified, although suggests most EMS stress is about the organisation, not trauma incidents.	Not identified. Suggests that critical incident stress debriefing is harmful and should not be part of an emergency organisation's strategies for dealing with minor or major trauma. Suggest using psychological first aid as a strategy. Suggest psychological first aid*: listening, conveying compassion, assessing needs, ensuring basic physical needs are provided, not forcing talk, providing or mobilising family or significant others, protecting from additional harm* (p 66).
Bracken-Scally et al.[58] 2015 Ireland	One of the most distinctive characteristics of emergency service work is the reality of regular exposure to trauma and a range of other work-related stressors.	Employers have a duty of care to protect their staff against the effects of stress and trauma. Arguably, this duty of care also applies to employees who are about to retire, or who have just retired, from high-risk occupations.
Chappell & Mayhew[36] 2009 Australia	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Clompus & Albarran[54]	The change in the healthcare system culture was explored several times in this paper and described as the increased pressure to achieve	Paramedics said they rarely get positive feedback from managers.

Author, year, country	Question 7: Effects of workflow & nature of work on mental health and well-being	Question 8: Effects of organisational structures on psychological and physical well-being
2016 England	targets (time to job, time at scene, time dropping patient off at hospital), changes in the skill mix and roles (introduction of emergency care assistants, and single manned rapid response vehicles and the use of standby points) seen to have eroded team support and opportunity for peer feedback.	No comment was made on the effect of informal structures that addressed respite.
Coxon et al.[55] 2016 England	Stress caused by too few call-takers and dispatchers, and at the other end, not enough ambulances, which left the dispatcher waiting with a very sick patient. Training was seen as inadequate - done in multi-disciplinary team with paramedics did not seem relevant.	EMDs said they rarely get positive feedback from managers and paramedics or the service; only feedback when something goes wrong. Significant time commenting on poor training, too little training and education. Poor interpersonal relationships with paramedics on the road and with other staff. Breaks during the day were often not taken as when this was done it was difficult to get a sense of subsequent jobs Strategies: Training, Going out on road, Separating out work from home, and Talking to partner. Strategies for mentally winding down between work and home – post-work strategy for letting go.
Donnelly & Bennett[27] 2014 USA	Not discussed.	Not discussed.
Donnelly & Siebert[28] 2009 USA	The literature review identifies 2 sources of stress: workplace stressors and critical incident stressors. Workplace stressors are: 1) insufficient salary; 2) an alienated and unsupportive administration; 3) lack of support from, or conflict with, colleagues; and 4) interference with non-work-related activities. Added to these are risk of exposure to pathogens, threats of both verbal and physical violence, injury, and death due to vehicle crashes, and in the USA working 24 hours shifts, along with management lack of support, conflict with peers, etc. Second source is critical incidents - issues to do with patient care. Mitchell's initial conceptualisation of critical incidents included:	Does not deal with this directly, except to identify the workplace as a stressor. Protective factors are categorised under social environment and personal resources: *Social environment* Social environment stressors include an alienated and unsupportive administration, a lack of support from or conflict with colleagues, and occupational interference with non-work-related activities.

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	• The serious injury or death of an emergency team member in the line of duty • The serious injury or death of a civilian resulting from emergency service operations • Cases charged with profound emotion, such as the death of an infant • Cases that attract unusual attention from the news media • A loss of life after a prolonged rescue effort • Serious physical or psychological threat to the rescuers • Incidents that surpass the normal coping mechanisms of personnel The initial conceptualisation of critical incident stress is formulated in a broad enough way to encapsulate most critical incidents. However, it would be difficult to quantify or measure "incidents that surpass the normal coping mechanisms of personnel". Additionally added dealing with acutely ill or seriously injured people, dealing with psychiatric patients, dealing with family and friends, dealing with dead bodies. Critical incidents have a cumulative effect. Uses the term binary - workplace stressors can be intermittent, but also cumulative.	The paramilitary and cohesive environment of the service is seen as supportive – positive social relationships within the services, bonding with peers, and bonding vertically with managers. *Personal resources* Personal resources are divided into two sections: 1) Demographic characteristics (e.g., age, gender, race, level of training, years of professional experience); and 2) personal psychological factors (e.g., cognitive structure and coping mechanisms - having internal locus of control). Training programs that develop internal locus of control seen as helpful in developing stress coping skills.
Dropkin et al.[29] 2015 USA	Shorter shifts associated with reduction in fatigue and injuries; however, staff prefer longer shifts so they can work a second job due to low pay. Staff wanted third partner to assist with load. Equipment and ambulance contributed to physical injury. Lack of consultation contributed to injuries.	Discussion with organisation on needs would assist with better equipment and working conditions. Suggestions for improvement include: • Better equipment • More resources • Discussions with EMT on-road • Third person on vehicle • Opportunity to exercise/walk between jobs • Opportunity for proper meal breaks to eat healthy food

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Flannery[30] 2015 USA	Not discussed/noted or the focus of the paper.	The suggestion is for a multi-modal response by therapists to paramedic stress. Author demonstrates that single therapy interventions such as CBT have been shown to be ineffective for first responders. Clinicians treating rape and disaster victims have created integrated treatments, but these have not been trialled with first responders. This may be due to a lack of media focus on first responders. First responders go from one critical incident to another, so limited time between them. Little time for counselling. First responders may self-medicate to deal with issues. First responders do not have links to services. Trauma disruption to three domains: mastery over environment, caring attachment to others, and meaning and purpose. Psychological symptoms include memories of the event, avoidant symptoms, and reduced interest in life activities. Approaches to mastery: Limit exposure time onsite, update local responders on their families, field workers from outside the area. These strategies are made difficult by the organisational culture. Caring attachment: social support sometimes helpful. Meaning: CBT has been found to be effective in restoring meaningful purpose. Symptoms: CBT does not always resolve symptoms. Medication and mindfulness may work. No studies have examined in vivo de-sensitisation procedures. Need studies to research multi-modal approaches that are rigorous in design.
Forslund et al. [49] 2004 Sweden	Work is uncertain: Information is diffuse and limited and they often are not aware of context.	Not discussed/noted or the focus of the paper.

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	There can be communication difficulties when dealing with a child or hearing-impaired person, when medical language is used or speaker is a second language speaker.	
Gallagher & McGilloway[59] 2008 Ireland	Lack of time for recovery given workloads. Lack of concern from management. Poor rosters. Failure of management to recognise impact of CI. Need more training and education in stress management, especially for new recruits. Need recovery time - not provided. Supervisors to recognise signs of stress. EM call-takers work by themselves at night and on weekends when it can be busy.	Lack of time for recovery, given workloads. Lack of concern from management. Poor rosters. Failure of management to recognise impact of CI. Need more training and education in stress management, especially for new recruits. Need recovery time - not provided. Supervisors to recognise signs of stress. EM callers work by themselves at night and on weekends when it can be busy.
Gist & Harris Taylor[31] 2008 USA	General workplace conditions impact on stress levels. Consideration needs to be given to HR components, e.g., worker's compensation, employee assistance, health benefit plans, as well as operational practices and protocols. Need a process within the organisation that links essential HR operations to management practices, and provides structure that allows them to be applied when necessary.	Essential for both formal and informal approaches to be offered. Suggests that, for the most part, informal strategies are effective. Critical incident stress debriefing is not necessarily the best approach, and in the US context, it is sometimes done by untrained or poorly trained practitioners.
Golding et al.[56] 2017 England	Training inadequate resulting in increased stress and a negative perception of the organisation, and lower personal responsibility for performance. Organisation of work impacts on stress; e.g., supervisor's lack of skill. High workload and lack of control over their work.	Not directly noted. Strategies to cope with negative effects of workplace stressors included the use of emotional regulation and engaging in peer support. Some of the evidence from this review, however, suggests the EDC work environment does not always provide opportunities for sufficient peer support. Existing research from other emergency medical settings suggests that the peer support element of working in a team can be beneficial for managing stress and preventing burnout. Interventions in the form of cognitive behaviour therapy or mindfulness.

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Halpern et al.[43] 2009 Canada	Definition of critical incidents. Ambulance workers appeared to use a working definition of critical incidents as a workplace phenomenon which they differentiate from chronic workplace stressors. Critical incidents are discrete incidents in the field which are attended by the ambulance worker. They involve strong emotions which last for long enough to be uncomfortable in their own right or to produce uncomfortable sequelae. The emotions were often sadness or anger. Chronic workplace stressors include high volume of workload, ongoing difficulties with management, and shift work. These may impact on the experience of critical incidents, but they are also distinguished from it. The management of the incident by the organisation before, during, and after it has transpired are considered an important aspect of the incident. They regard critical incidents as an often distressing component of their occupation which should be managed primarily within the organisational context.	Not identified directly, although strategies for managing it included. Peer and supervisor support, as well as a brief period post-incident in which to access them. A significant barrier to accessing support in the workplace was their difficulty in acknowledging distress. The culture of the organisation stigmatises vulnerable feelings. However, more recent recruits tended to feel quite comfortable with their own feelings of distress.
Halpern et al.[44] (2009) Canada	Supportive qualities demonstrated by supervisors included: • Acknowledging the incident as critical (implicit or explicit) • Expressing concern about the well-being of the EMT • Willingness to listen • Valuing the EMT's work • Offering material help Barriers for EMTs requesting support from supervisors included: • Fear of stigma and appearing weak • Not recognising the call as a critical incident • Avoiding thinking or speaking about the call, or just saying "I'm fine" • Expecting an unsupportive response Barriers for supervisors in providing support to EMTs included: • Supervisor's own emotional discomfort	*Timeout* Optimally 1/2–1 hour, in which the EMT is taken out of service to spend with peers, and less often alone, e.g., getting a coffee with your EMT partner before starting paperwork, a supervisor took EMTs out of service to have lunch and talk amongst themselves (not necessarily about the call) to relax before going back on shift. Barriers to timeout: • Fear of stigma and appearing weak • Time pressures • Concerns about confidentiality • Talking about incidents the EMT has been trying to suppress • Not recognising the call as a critical incident • Avoiding thinking or speaking about the call, or just saying "I'm fine" • Expecting an unsupportive response

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	• Supervisor's difficulty identifying idiosyncrasies that make a call critical • Supervisor's difficulty in recognising an EMT is emotionally affected by a call • Inadequate skills and possibly poor training • Restrictive role definition (e.g. EMTs assuming they've done something wrong if a supervisor approaches them) Supervisors who were seen as unsupportive were felt to be critical, and were often described in angry, resentful, and disappointed tones.	*Debriefing* Perceptions ranged from helpful to harmful. Emergency physicians were sometimes consulted during this early period for reassurance about management of calls involving patients who succumbed to their illness/injury. New recruits may be hesitant to participate in debriefing if they have not yet developed a strong connection with peers, or who are fearful of appearing weak or incompetent. Often family and friends are the preferred companions for these employees; however, this often has to be postponed until the end of shift. However, more experienced EMTs often protected family and friends from the 'burden' of hearing about critical incidents. Despite the majority of EMTs preferring that interventions be optional, some suggested that the most common types of critical incidents (e.g., those involving children) be routinely followed up by supervisors or mental health staff, and even went so far as to recommend that debriefing be mandatory. The types of interventions valued by EMTs differ appreciably from the format of Critical Incident Stress Debriefing. Although CISD focuses on the role of the workplace, it is a formal process that is often designated to mental health professionals rather than to the members of the EMS organisation.
Hegg-Deloye et al.[45] 2014 Canada	Not noted.	Not noted.
Hugelius et al.[50] 2014 Sweden	Managers stressed the importance of an individual perspective and of an awareness that a specific situation might be experienced as a traumatic event for one individual but not for others. *"It doesn't have to be traffic accidents or sudden infant deaths".*	The lack of crisis support interventions after traumatic events were associated with staff "collecting" negative emotions and experiences with a limited possibility for mental health recovery. The interest in crisis support interventions at a higher strategic level in the ambulance services organisations was fragmented; some managers thought that the issue was a high priority, while others found it difficult to find time and money to perform crisis support interventions.

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		Ensuring appropriate crisis support interventions after a PTE was seen as an important part of the ambulance manager's role. The challenges described were to identify when, and for whom, crisis support interventions were needed. Participants expressed doubts about whether mandatory crisis support meetings were the best way of supporting their staff, suggesting that an informal “ordinary cup of coffee and a chat” can be just as effective. The ambulance managers expressed a fear of ‘‘overdoing’’ the supportive approach and of overdramatising the reactions among the ambulance personnel, which could lead to non-supportive interventions. Additional crisis support intervention info: Situations in which crisis support interventions had been implemented in recent years included: • Suicide by a young person • Sudden death of an infant • Aircraft accident • A person who was hit by a train • Situations involving violence or threats against the ambulance personnel Crisis support interventions were described as single-session group meetings with all involved staff, where they could express how they acted at the scene, as well as their feelings and emotions about the situation. The sessions were led by a designated leader (often the ambulance manager or a senior colleague) and followed a predefined structure. The ideal time to conduct the sessions differed, with responses including: as soon as possible, later on the same day, and the morning after. All ambulance managers stated that the best option for the staff involved was to stay at the workplace after participation in the crisis support intervention. A few ambulance managers also mentioned practical support as a kind of crisis support intervention, such as the provision of new clothes, or getting in contact with family or friends.

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Jonsson & Segesten[51] 2004 Sweden	Not noted.	Not noted.
Klimley et al.[32] 2018 USA	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Larsson et al.[52] 2016 Sweden	Not discussed/noted or the focus of the paper.	Favourable informal supports include a supportive climate promoting discussions with colleagues about emotions, and to sometimes socialise outside of work.
Lindahl[33] 2004 USA	Not discussed/noted or the focus of the paper.	A firefighter/paramedic was denied Workers' Compensation following a critical incident as he had previously reported some PTSD symptoms prior to the incident, and PTSD was compensable only as an injury by accident arising from a single critical incident. He then filed an application for a hearing before the Workers' Compensation Commission who upheld the previous decision. In a second claim, he alleged that his PTSD was an occupational disease arising from his employment; however, this was denied on the basis that the PTSD resulted from cumulative or repetitive trauma. The firefighter/paramedic then appealed to the Virginia Court of Appeals which reversed the denial of benefits, ruling that the PTSD was an occupational disease. The employer unsuccessfully appealed the decision to the Virginia Supreme Court who remanded the case to the Court of Appeals, directing it to remand the case to the Workers' Compensation Commission to calculate the amount of benefits to be paid.
Mahony[57] 2005 UK	A reduction in the number of crews, meaning crews from any station can now be deployed anywhere in the large region covered by the service. The CEO has a long-term plan of seeing each crew and their vehicle as a mobile office/station, forever ready on the highway to respond to situations quickly.	*Less worker autonomy and more management control as stressors* Personnel exercise little autonomy in regards to administrative or clinical decisions, degrading the skills of experienced ambulance officers. A satellite tracking system and a computerised data entry system have been implemented. Managers in the control room, rather than the officers, now decide how much time each case should take and when

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	Work has intensified due to the increase in the number of 'calls from the general public', meaning that they are sometimes getting called to the next job before they have finished the current one. Gaps in the roster caused by sickness, pregnancy, recreation leave, and other absences have to be covered by other crew members on a time-in-lieu basis as paid overtime and penalty rates have been traded-off for marginally better rates of pay. However, officers were unable to take time-in-lieu owed to them due to high absenteeism. They did not want to 'let the team down' and are expected to show loyalty by giving their time to the service. Ambulance officers reported heavy workloads and the lack of opportunities to take the agreed-upon two half-hour breaks back at the station in every 12 hour shift, because they were constantly allocated assignments by staff in the Control Room. Relief crews are not assigned or are unavailable because of high absenteeism. 2 senior managers pre-empted complaints about missed meal breaks: • 1 was empathetic and acknowledged the increased workload on his staff. He related how Control Room managers did not have a crew available to relieve a crew for their meal break back at the station • 1 considered the complaints to be unfounded, commenting that, 'when I was on the road, there must have been something wrong with you if you couldn't find time to eat' Officers worried about low blood sugar causing poor concentration and deterioration in their tolerance levels.	a crew is ready for another assignment. Officers have lost what little control they had over pacing their work and deciding on their recuperation periods to informally debrief with colleagues following a job. Increased staff surveillance effectively does away with 'foreign orders' (crews taking time out to attend to personal activities). Managers would sometimes turn a blind eye' to 'foreign orders' to give officers some sense of control over the pace of their work. Increased staff surveillance will prevent this. The new technologies are not acknowledged as new means of staff control. They are instead rationalised as being in the interests of accountability and professionalism. If officers resist, they risk being accused of not putting their patient first, of not caring about their patient. The annual staff turnover rate is only two per cent. The occupational stressors that ambulance officers experience, it seems, are preferable to unemployment stressors. Decision-making remains centralised in the hands of a few senior executives and has not been devolved to the 'road face' as originally intended. Each Station Officer has a series of administrative tasks to complete each day, often in their own time as they are on the road all day. The combination of difficulty sleeping (due to needing time to wind down after a shift) and hunger was said to impact on personal relationships. Additionally, missed meal breaks/irregular meals were associated with gastrointestinal problems and low blood sugar causing poor concentration and deterioration in their tolerance levels. *The infinite expansion of shift times* Less staff for each post and longer shifts per member now mean that the service does not need to employ as many people, nor do they need to allocate as many relief positions. Now that a crew can be sent anywhere in the area covered by the service, it takes longer for officers to get back to their station at the end of shift, causing them to work well over the end of shift.

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		The indeterminate nature of finishing times makes it difficult for officers to participate in social activities and family life. Officers were commonly allocated to a job near the end of their shift, meaning that they do not finish until many hours after they were scheduled to. Staff in the Control Room must send the nearest available ambulance to minimise response times (quality control criteria), not only to improve patient outcomes, but to give the organisation a competitive edge when tendering for contracts. Rural officers had the added stressor of being 'on call' on their days off. They cannot relax with an alcoholic drink nor venture far from home. Although the ambulance officers of Service UK are supposedly being paid at a rate that is marginally better than the base rate of most other services, officers with small children and a spouse who is not in paid employment have the added stressors of not having the requisite finances for a normative standard of living.
Mahony[64] 2001 Australia & UK	*Problems with management* Problems with management related to control; staff believing that all management decisions, directives, and moves were out of their sphere of influence; that they were mere pawns in the managers' much larger plans; powerless to change things. Australian ambulance personnel described management as indecisive, failing to communicate plans and decisions with staff, and that they were often subject to arbitrary power exercised by managers who created new rules to suit themselves. Managers in the UK service were described as organised and efficient; however, this came at the expense of problem-solving and participatory decision-making. Management's objectives on efficiency and response times in conflict with the paramedics' objective of providing quality patient care. Paramedics reported being unable to do this if they are fatigued, rushed, and forced to cut corners trying to meet management's objectives.	Not discussed/noted or the focus of the paper.

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	Cumulative impact of stressors: being called to another job before finishing the current one, not having had a break or eating, physical impact (back problems), colleagues on sick leave - "*The pressure goes higher, higher, higher – eventually it's all going to pop".* *Clinical frustration* The majority of Service Oz officers expressed frustration at having to transport clients who were clearly not in need of hospital care. In neither service were officers allowed to decide which patients are transported to an emergency department of a hospital and this results in many unnecessary and inappropriate transfers. Officers reported being "stuck" at their current level, with applications for clinical advancement repeatedly declined to the extent that officers described their position as a "dead end job". Competition to gain entry into the elite paramedic course in the Australian service was intense, creating rivalry where there was once mateship. Respondents commented that the process for entry was unclear, and that selection was unfair and smacked of favouritism and cronyism. Applying for clinical skills advancement was such a stressful and demoralising experience that officers reported that they would "never apply again", "never put myself through that again". One officer commented "I withdrew from everyone and stayed at home watching escapist videos". Sickness, pregnancy, or recreation leave had to be covered by other ambulance personnel on a time-in-lieu basis, as paid overtime and penalty rates had been traded off for marginally better rates of pay in individually bargained enterprise agreements. All participants had accumulated many hours' time-in-lieu, which they were unable to take because of the high absenteeism at the time. UK participants reported that it was common to be allocated a patient transfer half an hour before the end of a twelve-hour shift and not to complete an assignment and return to the station until sometimes 7 hours after their shift was meant to finish. In both services, officers complained that management did not care about their staff. In Service Oz, it was reported that senior managers were considered to be too distant to know what an officer's work entailed to be able to care. In service UK, the road staff felt that they	

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	were constantly pushed to achieve more with less resources and that management did not care about their welfare - *"we are supposed to be a caring service, but that does not extend to staff ".* When officers complained to management about working long past the end of shift, they were told to *"get on with it, you've got a three day break".* One senior executive predicted that the officers would complain during the interviews, that they were not getting their proper meal breaks: *"when I was on the road, there must have been something wrong with you if you couldn't organise time to eat"*. I noted that this was before a satellite tracking system could locate vehicles putting an end to 'foreign orders'. The stressor of having a founded or unfounded complaint made against you by a member of the public was a stressor, often due to the way senior managers dealt with such situations, causing officers to take sick leave, stress leave, consult mental health practitioners, be on medication and contemplate resigning from the service. Both the respondents in the UK and Australia samples were quick to point out that they received the much needed understanding and support from their immediate colleagues and/or Station Officer. It was senior managers who were considered to be aloof and insensitive. Middle-aged participants reported that, when they joined the service, they were led to believe that, after twenty to thirty years of night work and physical on-road work, they would be rewarded by promotion to a nine to five administrative, training, or co-ordination position. There were positive aspects to the old seniority system. Now, after many years of service, there are no rewards or respite in sight. Early retirement is not an option due to the number of years of service required before they would be eligible for the full benefits of the pension scheme. Australian participants felt that they were not allowed sufficient time between a traumatic assignment and the next case to take part in a debriefing and to recover - to "de-stress, especially in rural areas", e.g., following the death of a child, a paramedic was not allowed time to participate in debriefing being held with other emergency services and health professionals involved in the case, instead being sent	

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	straight to another case, where the next patient was able to tell that the paramedic was upset. There was some acknowledgement that dispatch in the Australian ambulance service tried to keep track of who has been sent to what sort of an assignment. This was not the case in the UK because the closest crew was deployed no matter what the circumstances, as quality and efficiency were measured in response times, important signifiers to Service UK in terms of having the competitive edge when tendering for contracts. The UK service has a long-term plan of seeing each crew and their vehicle as a mobile office/station, continually on the road in order for crews to be located and deployed more quickly. The Australian officers reported that the other emergency services were better organised to deal with critical incident stress, e.g., ambulance personnel attended a house fire with multiple fatalities. The Fire Brigade provided their staff with on-site refreshments, a debriefing, and sent the officers home. In contrast, the ambulance personnel were sent straight to another job. Older, experienced officers, including level 3s who felt they had no opportunities for advancement, would not recommend the job to a friend/relative due to long indeterminate shifts, re-certification of their technical qualifications each year, the imposition of completing a university degree in their spare time, and intensification in the pace of work. In contrast, young, inexperienced officers, who believed that they had a career ahead of them, were very positive.	
Paterson et al.[37] 2014 Australia	Paramedics identified the following organisational reasons for fatigue: • Working time (long night shifts and an inability to rest during night shifts, inconsistent/late/no breaks, working beyond their specified shift finish time) • Sleep (lack of sleep or difficulty sleeping adequately before shifts, and not enough rest periods between shifts) • Workload (high/excessive workload, understaffing)	
Pow et al.[46] 2017	In addition to the options that participants could choose from on a checklist, occupational stressors reported via open-ended responses included patient care (e.g., pulseless patient with return of pulse, road rage incident, cardiac arrest), issues with coworkers (e.g., partner's	

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Canada	driving ability, incompetence of partner) and working conditions (e.g., lack of resources, missed lunch break, scheduling issues).	
Pyper & Paterson[38] 2016 Australia	Short recovery time between emergencies and frequent exposure to emotionally traumatic events has been shown to lead to burnout as well as a decline in job satisfaction. Ninety-three percent of respondents reported sleeping 5 h or less while on call, and a further 43% reported sleeping less than 8 h while not on call. Over half of the participants (55.9%) reported experiencing fatigue at work (35% severe; 20.9% mild). Diverting ambulances to high-volume centres in Australian rural and regional areas has resulted in longer transport times and decreased ambulance availability.	Suggestion to manage sleep and fatigue - changes to the scheduling of on-call periods, 'protected' sleep time during on-call periods, or education about fatigue management strategies for on-call periods. Strategies to manage extended commutes and increased workload as a result of decreased ambulance availability are critical in order to mitigate stress, and contribute to necessary improvements in recruitment and retention in rural and regional areas.
Regehr & Millar[47] 2007 Canada	Poor relationships with management, not being valued for their skills, and shift work were the major stressors encountered. Paramedics reported situations where their skills and knowledge were either not recognised or not utilised. Paramedics were not given the opportunity to use specialised skills that they had invested time and money into learning. Lack of resources and high workload/equipment. Lack of support if legal or clinical audit occurred.	Traumatic exposure is a clear stressor in the work of paramedics; the research argues that it is the emergency service organisation itself that causes the greatest degree of distress in personnel. Primary mediating factor of organisational stress is social support within the organisation, particularly from superiors - work group support and more positive supervisor behaviour resulted in lower work-related stress scores, and subsequently, lower rates of psychological distress. Paramedics have little influence over what should be done at work and how it should be done. The hierarchical structure of the organisation prevented the ability to influence decisions/authoritarian. Lack of decision-making authority when trying to admit their patients to hospitals. Little control over their continued employment, resulting in a fear of losing their jobs. Feeling unsupported when their supervisors questioned why they were reacting to an event that they did not perceive as traumatic.
Regehr et al.[48] 2002)	Not discussed/noted or the focus of the paper.	The majority of paramedics indicating that they received little or no support from their employers and unions.

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Canada		Peer support valued/helpful/benefits of “sharing tales” and telling jokes. The “macho atmosphere” dissuaded workers from discussing concerns and fears. Events that are flagged by members of the organisation as the ones where assistance is automatically offered are not necessarily the events having the largest impact on workers.
Rice et al.[39] 2014 Australia	While participants regarded the importance of physical health as their own responsibility, they believed support in the workplace was also needed.	Key areas that affect retention are job satisfaction and the workplace environment. Professional invalidation, low wages, and limited career progression have also intensified problems for paramedics. Physical health and the stress of long working hours were intertwined for paramedics.
Roth & Moore[34] 2009 USA	Not discussed/noted or the focus of the paper.	Not discussed/noted or the focus of the paper.
Skogstad et al.[60] 2013 Norway	Not discussed/noted or the focus of the paper.	Three main preventative strategies to prevent psychological distress following a traumatic event developing into mental illness: pre-employment selection, training in stress management, and early intervention. Limited research into the effect of pre-employment selection on levels of injury or disease. Training in stress management is important for personnel who have a high risk of encountering traumatic stress. Intervening early with psychiatric treatment, mobilisation of the internal resources of the company, is more effective in preventing psychiatric work disability than the utilisation of the ordinary healthcare system. In the acute phase following the traumatic event, it is important that the individual regains emotional control, restores interpersonal communication and group identity, regains a sense of empowerment through participation in work and strengthens hope, and the expectation of a recovery workplace crisis management plan with a trained team will ensure that employees receive information and support which can aid their recovery and help rapid return to work.

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		Selective serotonin re-uptake inhibitors in serious cases of chronic PTSD, whereas others emphasise the limited evidence for pharmacological interventions, particularly in the early phase. Cognitive behavioural therapy is an effective form of treatment for acute stress disorder and acute PTSD.
Sofianopoulos et al.[40] 2012 Australia	Burnout was attributed to reduced job satisfaction, longer time in service, less recovery between incidents and more frequent exposure to incidents. A relationship between work and mental health is evident, with work impacting the emotional well-being of ambulance personnel. Occupational stress was a common theme, where paramedics felt unhappy, stressed, and experienced low job satisfaction and poor mental and physical health. Some research has found no adverse effects of shift work on performance. One paper examining air medical personnel working 24 h shifts revealed that crew members completed the average duty cycle with little sleep debt. Fatigue resulted in the loss of life and posed a threat to paramedic and public safety (sleeping at the wheel, drug administration).	Scheduling and sleep are important factors. It has been found that shifts following a clockwise rotation are less disruptive to the circadian rhythm (i.e., morning, afternoon, and then night). Napping before, during, and after a night shift lowered levels of fatigue, increased performance, and reduced diminished performance.
Sterud et al.[61] 2006 Norway	Degree of exposure, peri-traumatic dissociation, fewer years of experience, external locus of control, and poor social support predicted higher levels of symptoms. Significant correlations between frequency of incident stressors, degree of organisational stress, degree of operational hassles, degree of emotional demands and poor communication, length of review following a critical event resulting in loss of life, and PTSD symptoms. Causes of (early) retirement were musculoskeletal, circulatory, and mental disorders.	Not discussed/noted or the focus of the paper.
Varker et al.[41] 2018 Australia	Factors relating to workplace mental health/well-being include operational aspects (e.g., shift work, potential occupational risks, job demands); aspects of the individual's career (e.g., student compared to later career workers) and aspects related to emotional resources, or lack thereof, within the workplace (feelings of workplace	Least researched areas were psychological factors relating to work injury, and intervention studies targeting mental health or well-being. Few studies in the following areas suicide, personality, stigma, pre-employment factors that may contribute to mental health outcomes, and the use of e-health. No studies were detected which examined the

Author, year, country	Question 7: Effects of workflow & nature of work on mental health and well-being	Question 8: Effects of organisational structures on psychological and physical well-being
	belongingness; perceived workplace support and sense of camaraderie; and bullying).	prevalence of self-harm and/or harm to others, bullying, substance use, and barriers to care.
Wiitavaara et al.[53] 2007 Sweden	Unwanted organisational re-structuring and the following turbulence and conflicts with increasing demand and educational requirements were described as irritation, frustration, anger, nagging worry, insecurity, lowered self-esteem, lowered status and offended pride, and few possibilities to influence this situation.	Getting relief by sharing experiences with colleagues as part of their daily work routine and by formal debriefing.
Wolkow et al.[42] 2015 Australia	Early start times and shift work can cause a misalignment to the circadian rhythm of physiological functions. Extended work hours, long commutes, overtime, and being on-call can also disrupt sleep. Exposure to environmental (e.g., light and noise), physical (e.g., intense physical work), and/or psychological (e.g., critical decisions, life-threatening situations) work-related stressors can disrupt the circadian rhythm. Extreme sleep restriction over multiple days of emergency work (e.g., 1–7 h of sleep over 2–7 days) can: • Disrupt the circadian cortisol rhythm • Disrupt (i.e., above and below baseline or control levels) pro- (i.e., IL-6, TNF-α and IL-1β) and anti-inflammatory cytokine levels (i.e., IL-1ra) • Elicit adverse psychological responses (i.e., deterioration in mood) • Cause a simultaneous increase in both cortisol and cytokine levels (i.e., IL-6)	Further investigation is needed to determine, more specifically, the amount and/or number of recovery sleep(s) required for hormonal and inflammatory markers to recover following various types of emergency work.

Appendix 6: Peer-reviewed literature - CASP quality ratings of primary research and non-systematic literature reviews

Author, year	Aims clearly stated	Qualitative methodology appropriate	Research design appropriate	Recruitment strategy appropriate	Data collected in a way that addressed research issue	Relationship between researcher & participants adequately considered	Ethical issues considered	Data analysis sufficiently rigorous	Clear statement of findings	How valuable is the research
Adams et al.[35] 2015	✓	✓	✓	✓	✓	×	×	✓	✓	Excellent interesting paper. Themes focused on operational stress and vicarious trauma arising from coping strategies, organisational stress, and then post-traumatic growth.
Alzahrani et al.[62] 2017	✓	✓	✓	✓	✓	×	×	?	✓	Perhaps useful for pointing out that privacy and confidentiality are the key.
Avraham et al.[63] 2014	✓	✓	✓	✓	✓	?	✓	✓	✓	Useful themes that looked across the 'on the way', during, and after the event. Important and detailed analysis and description of processes of control and detachment as

Author, year	Aims clearly stated	Qualitative methodology appropriate	Research design appropriate	Recruitment strategy appropriate	Data collected in a way that addressed research issue	Relationship between researcher & participants adequately considered	Ethical issues considered	Data analysis sufficiently rigorous	Clear statement of findings	How valuable is the research
										coping strategies.
Bledsoe & Barnes[26] 2003	✓	×	✓	N/A	N/A	N/A	N/A	N/A	✓	Valuable paper for critique of CISD and for providing alternatives.
Bracken-Scally et al.[58] 2015	✓	✓	✓	✓	✓	×	✓	✓	✓	Gives a broad overview of the implications for post-employment/retirement for those working as ESFR.
Chappell & Mayhew[36] 2009	✓	✓	✓	?	✓	×	×	?	✓	The study findings provide an overview of the nature of violent incidents experienced by ambulance officers. However, little detail is given regarding the impact of these incidents on ambulance officers' mental health, as this component was explored using quantitative

Author, year	Aims clearly stated	Qualitative methodology appropriate	Research design appropriate	Recruitment strategy appropriate	Data collected in a way that addressed research issue	Relationship between researcher & participants adequately considered	Ethical issues considered	Data analysis sufficiently rigorous	Clear statement of findings	How valuable is the research
										methods, but the sample size was too small for a statistical analysis to be conducted.
Clompus & Albarran[54] 2016	✓	✓	✓	✓	✓	×	✓	✓	✓	Paper aims to explore the resilience of paramedics and what toolkit of strategies they have to cope with workplace stressors. This toolkit reflects many of the strategies revealed in other papers. Defines them as formal strategies provided by the organisation, informal strategies of peers, etc., internal strategies of compartmentalising, and external strategies of

Author, year	Aims clearly stated	Qualitative methodology appropriate	Research design appropriate	Recruitment strategy appropriate	Data collected in a way that addressed research issue	Relationship between researcher & participants adequately considered	Ethical issues considered	Data analysis sufficiently rigorous	Clear statement of findings	How valuable is the research
										seeking outside help.
Coxon et al.[55] 2016	✓	✓	✓	✓	✓	✓	✓	✓	✓	Qualitative study interviews with dispatchers on how their job is perceived poorly by paramedics and the public. Little appreciation of the trauma and stress in managing to get paramedics to the sick person. Strongest focus was on need for training and education and for team building with paramedics.
Donnelly & Bennett[27] 2014	✓	✓	✓	N/A	✓	N/A	N/A	✓	✓	Study set out to develop a critical incident stress inventory based on one used for police, which was then modified and trialled. The qualitative component of the survey

Author, year	Aims clearly stated	Qualitative methodology appropriate	Research design appropriate	Recruitment strategy appropriate	Data collected in a way that addressed research issue	Relationship between researcher & participants adequately considered	Ethical issues considered	Data analysis sufficiently rigorous	Clear statement of findings	How valuable is the research
										asked respondents to list additional critical incidents not included in the 27-point inventory. Each critical incident was ordered according to number of times experienced and paramedic view on impact.
Donnelly & Siebert[28] 2009	✓	✓	✓	N/A	✓	N/A	N/A	✓	✓	Provides a typology of stressors divided between those leading to PTSD and PTSS, and then occupational stressors and critical incident stressors. Coping mechanisms are divided into social (work place, leadership styles, organisation of service, culture

Author, year	Aims clearly stated	Qualitative methodology appropriate	Research design appropriate	Recruitment strategy appropriate	Data collected in a way that addressed research issue	Relationship between researcher & participants adequately considered	Ethical issues considered	Data analysis sufficiently rigorous	Clear statement of findings	How valuable is the research
										of service as paramilitary). Personal is divided into psychological e.g., locus of control, and demographic e.g., years of service, gender, age, training levels.
Dropkin et al.[29] 2015	✓	✓	✓	✓	✓	×	✓	✓	✓	Focus is on physical health and injury in the job and the differences between management and on-road.
Flannery[30] 2015	✓	N/A	✓	N/A	?	N/A	N/A	✓	✓	The author demonstrates that single therapy interventions such as CBT have been shown to be ineffective for first responders, instead suggesting a multi-modal response by therapists to

Author, year	Aims clearly stated	Qualitative methodology appropriate	Research design appropriate	Recruitment strategy appropriate	Data collected in a way that addressed research issue	Relationship between researcher & participants adequately considered	Ethical issues considered	Data analysis sufficiently rigorous	Clear statement of findings	How valuable is the research
										paramedic stress.
Forslund et al.[49] 2004	✓	✓	✓	✓	✓	?	✓	✓	✓	Paper focuses on call center operators about what is difficult and stressful in their job.
Gallagher & McGilloway[59] 2008	✓	✓	✓	✓	✓	×	×	✓	✓	The findings suggest that exposure to CIs has a significant impact on health and well-being and identifies a range of barriers to support service utilisation. A need for professional counselling and stress awareness training was also identified.
Gist & Harris Taylor[31] 2008	✓	N/A	✓	N/A	✓	N/A	N/A	✓	✓	Suggests core elements of psychological first aid. Recommends solid EAP services that

Author, year	Aims clearly stated	Qualitative methodology appropriate	Research design appropriate	Recruitment strategy appropriate	Data collected in a way that addressed research issue	Relationship between researcher & participants adequately considered	Ethical issues considered	Data analysis sufficiently rigorous	Clear statement of findings	How valuable is the research
										are not simply one-offs, but are available to staff at their discretion and for issues wider than the workplace. Provides a list of steps for assistance from the initial one of peer support, and the time for this to occur, to formal counselling.
Halpern et al.[43] 2009	✓	✓	✓	✓	✓	✓	✓	✓	✓	Ambulance workers suffered considerable distress from critical incidents and would welcome interventions. Incidents that were identified as critical commonly involved patient death often combined with poignancy. These events

Author, year	Aims clearly stated	Qualitative methodology appropriate	Research design appropriate	Recruitment strategy appropriate	Data collected in a way that addressed research issue	Relationship between researcher & participants adequately considered	Ethical issues considered	Data analysis sufficiently rigorous	Clear statement of findings	How valuable is the research
										appeared to evoke vulnerable feelings of inability to help and intense compassion, which led to further emotional, cognitive, and behavioural responses. Difficulty in acknowledging distress and fear of stigma presented significant barriers to accessing support. These barriers may be overcome by educating both ambulance personnel and their supervisors to recognise and tolerate the vulnerable feelings often evoked by

Author, year	Aims clearly stated	Qualitative methodology appropriate	Research design appropriate	Recruitment strategy appropriate	Data collected in a way that addressed research issue	Relationship between researcher & participants adequately considered	Ethical issues considered	Data analysis sufficiently rigorous	Clear statement of findings	How valuable is the research
										critical incidents.
Halpern et al.[44] 2009	✓	✓	✓	✓	✓	×	✓	✓	✓	Highlights not only the importance of supervisor support and a timeout period immediately following a critical incident, but also the barriers to these forms of support being provided. Of note, the interventions suggested or valued by participants differ from the traditional Critical Incident Stress Debriefing Format.
Hegg-Deloye et al.[45] 2014	✓	N/A	✓	N/A	✓	N/A	N/A	✓	✓	The majority of studies included in this literature review were quantitative. The authors identify areas for future

Author, year	Aims clearly stated	Qualitative methodology appropriate	Research design appropriate	Recruitment strategy appropriate	Data collected in a way that addressed research issue	Relationship between researcher & participants adequately considered	Ethical issues considered	Data analysis sufficiently rigorous	Clear statement of findings	How valuable is the research
										research and the need for interventions, both at an individual and organisational level, to minimise emotional disorders among paramedics.
Hugelius et al.[50] 2014	✓	✓	✓	✓	✓	×	×	×	✓	This article provides a useful insight into the nature of the crisis support interventions provided to ambulance personnel in a health region of Sweden. A larger sample size would provide a greater range of experiences upon which to base conclusions. However, consensus was reached among

Author, year	Aims clearly stated	Qualitative methodology appropriate	Research design appropriate	Recruitment strategy appropriate	Data collected in a way that addressed research issue	Relationship between researcher & participants adequately considered	Ethical issues considered	Data analysis sufficiently rigorous	Clear statement of findings	How valuable is the research
										the participants, indicating some transferability. The validity of the findings would have been improved if the analysis was conducted on transcripts derived from audio-recordings rather than notes taken during the interviews.
Jonsson & Segesten[51] 2004	✓	✓	✓	✓	✓	✓	✓	✓	✓	The findings provide a detailed description of the emotions experienced by ambulance personnel at all stages of a traumatic experience, from pre-arrival through to post-event.
Klimley et al.[32]	✓	N/A	✓	N/A	✓	N/A	N/A	N/A	✓	The majority of the articles included in the review that

Author, year	Aims clearly stated	Qualitative methodology appropriate	Research design appropriate	Recruitment strategy appropriate	Data collected in a way that addressed research issue	Relationship between researcher & participants adequately considered	Ethical issues considered	Data analysis sufficiently rigorous	Clear statement of findings	How valuable is the research
2018										pertain to emergency medical dispatchers appear to be either quantitative in nature or were published prior to the year 2000, highlighting a need for further qualitative research into the mental health of this group of emergency service workers.
Lindahl[33] 2004	✓	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A	No limitations identified by author.
Mahony[57] 2005	×	✓	✓	?	✓	✓	×	?	✓	The article highlights the range of organisational stressors experienced by ambulance officers as a result of corporate restructuring,

Author, year	Aims clearly stated	Qualitative methodology appropriate	Research design appropriate	Recruitment strategy appropriate	Data collected in a way that addressed research issue	Relationship between researcher & participants adequately considered	Ethical issues considered	Data analysis sufficiently rigorous	Clear statement of findings	How valuable is the research
										many of which arise from increased workload intensity.
Mahony[64] 2001	✓	✓	✓	?	✓	✓	×	?	✓	The article provides an in-depth exploration of occupational stressors experienced by ambulance personnel. It is acknowledged that the stressors reported by the participants were similar to those that could be found in other organisations.
Paterson et al.[37] 2014	✓	✓	✓	✓	✓	×	?	✓	✓	Both organisational and non-organisational factors were identified by paramedics as causing fatigue The topic could be further explored using

Author, year	Aims clearly stated	Qualitative methodology appropriate	Research design appropriate	Recruitment strategy appropriate	Data collected in a way that addressed research issue	Relationship between researcher & participants adequately considered	Ethical issues considered	Data analysis sufficiently rigorous	Clear statement of findings	How valuable is the research
										interviews or focus groups to allow participants to elaborate on their experiences.
Pow et al.[46] 2017	✓	N/A	✓	✓	✓	×	✓	✓	✓	The quantitative data provides useful information on the beneficial impact of perceived support on sleep quality and minimising the effects of occupational stress on sleep. The open-ended question included in the survey provided an opportunity for participants to identify occupational stressors not already included in the survey instrument.

Author, year	Aims clearly stated	Qualitative methodology appropriate	Research design appropriate	Recruitment strategy appropriate	Data collected in a way that addressed research issue	Relationship between researcher & participants adequately considered	Ethical issues considered	Data analysis sufficiently rigorous	Clear statement of findings	How valuable is the research
Pyper & Paterson[38] 2016	✓	?	✓	✓	✓	✓	✓	✓	✓	Predominantly quantitative, but with some relevance through the open question analysis.
Regehr & Millar[47] 2007	✓	✓	✓	✓	✓	?	✓	✓	✓	Provide a good basis for understanding paramedic challenges with managing organisational stress.
Regehr et al.[48] 2002	✓	✓	✓	✓	✓	✓	✓	✓	✓	Outlines the sources and responses to workplace/organisational stress.
Rice et al.[39] 2014	✓	✓	✓	✓	✓	✓	✓	?	✓	Some relevance to the question of the relationship between stress and physical health/not predominantly paramedic-focused.
Roth & Moore[34]	✓	✓	✓	✓	✓	✓	✓	✓	✓	Provides insight into the

Author, year	Aims clearly stated	Qualitative methodology appropriate	Research design appropriate	Recruitment strategy appropriate	Data collected in a way that addressed research issue	Relationship between researcher & participants adequately considered	Ethical issues considered	Data analysis sufficiently rigorous	Clear statement of findings	How valuable is the research
2009										relationship between family and those that work in emergency services and how the work affects the family system.
Sofianopoulos et al.[40] 2012	✓	N/A	✓	N/A	✓	N/A	N/A	✓	✓	The review provides a good overview, and the findings suggest that further work is required to examine shift hours and workforce health and safety in the pre-hospital setting.
Varker et al.[41] 2018	✓	N/A	✓	N/A	✓	N/A	N/A	✓	✓	An Evidence Map identifies local areas of need and the gaps.
Wiitavaaraa et al.[53] 2007	✓	✓	✓	✓	✓	✓	✓	✓	✓	Valuable in terms of understanding how physical illness is perceived and

Author, year	Aims clearly stated	Qualitative methodology appropriate	Research design appropriate	Recruitment strategy appropriate	Data collected in a way that addressed research issue	Relationship between researcher & participants adequately considered	Ethical issues considered	Data analysis sufficiently rigorous	Clear statement of findings	How valuable is the research
										conceptualised for ambulance personnel
Wolkow et al.[42] 2015	✓	N/A	✓	N/A	✓	N/A	N/A	✓	✓	Extreme sleep restriction over multiple days of emergency work can disrupt the circadian cortisol rhythm, disrupt pro- and anti-inflammatory cytokine levels, elicit adverse psychological responses, and cause a simultaneous increase in both cortisol and cytokine levels.

✓ - Yes

✕ - No

? – Could not be determined

N/A – Not applicable

Appendix 7: Peer-reviewed literature - CASP quality ratings of systematic reviews

Author (year)	Clearly focused question	Right type of papers	All the important, relevant studies included	Quality of included studies assessed adequately	Reasonable to combine the results	Overall results	Preciseness of results	Applicability of results to local population	All important outcomes considered	Benefits worth harms & costs	Comments
Golding et al.[56] 2017	✓	✓	✓	✓	✓	Evidence from both qualitative and quantitative studies were synthesised into two main themes: 'Organisational and Operational Factors' and 'Interactions with Others'. Subthemes explored factors that influenced perceived levels of stress, emotional distress, and/or well-being.	Thematic organisation of findings.	✓	✓	✓	Benefits to paramedics if organisations implement strategies.
Larsson et al.[52] 2016	✓	✓	✓	✓	✓	The mostly quantitative articles revealed that "first responder's experiences of daily hassles" is the central category of the	Clearly reported systematic method and thematic analysis of results.	✓	✓	✓	The interaction of daily hassles, individual factors, work/non-work environmental factors, and health outcomes are explored. Although only one qualitative

Author (year)	Clearly focused question	Right type of papers	All the important, relevant studies included	Quality of included studies assessed adequately	Reasonable to combine the results	Overall results	Preciseness of results	Applicability of results to local population	All important outcomes considered	Benefits worth harms & costs	Comments
						proposed conceptual model. First responder's experiences of daily hassles are a result of continuous appraisal and coping processes. These processes, in turn, are shaped by an interaction between the individual and work/non-work environmental factors. Daily hassles are suggested to contribute to short- and long-term outcomes regarding functioning and health.					study was included, it addressed issues relating to coping and social support that were not explored in the quantitative studies.
Skogstad et al.[60] 2013	✓	✓	✓	✓	✓	Ambulance personnel are at increased risk of experiencing stressful events that	Clear systematic review with analysis of the key issues.	?	✓	✓	

Author (year)	Clearly focused question	Right type of papers	All the important, relevant studies included	Quality of included studies assessed adequately	Reasonable to combine the results	Overall results	Preciseness of results	Applicability of results to local population	All important outcomes considered	Benefits worth harms & costs	Comments
						make them more likely to suffer PTSD. As with post-traumatic stress in general, work-related PTSD symptoms usually diminish with time. Furthermore, professionals without special training have higher risk of developing PTSD than trained personnel. Selection prior to potentially stressful occupations may have beneficial effects for prevention of work-related PTSD, including a sound work environment, social support from colleagues					

Author (year)	Clearly focused question	Right type of papers	All the important, relevant studies included	Quality of included studies assessed adequately	Reasonable to combine the results	Overall results	Preciseness of results	Applicability of results to local population	All important outcomes considered	Benefits worth harms & costs	Comments
						and managers, and a proper follow-up of employees.					
Sterud et al.[61] 2006	✓	✓	✓	✓	✓	Reported significant effects of work on ambulance personnel, but lack of consistency in the measures across studies.	Well-structured review with clear exclusion and inclusion criteria with critical analysis.	✓	✓	N/A	

✓ - Yes

✕ - No

? – Could not be determined

N/A – Not applicable

Appendix 8: Grey Literature – Summary of Google advanced search results

Source, date, country	Source type, focus	Question 1: Programs/resources to support mental health & well-being of Paramedics/Ambulance Officers and Call-takers	Question 2: Informal & indirect provisions for post-critical stress incidence (e.g., time on-road, leave, change in duties) or enforced retirement, & influence on superannuation/financial stability	Question 3: Innovations proposed to manage stress, psychosocial or physical consequences of work-place stress in Australian context (e.g., policy, legislation, industrial agreements)
Ambulance Victoria[107] 2016 Australia	Online organisational news story. Launch of the AV Mental Health and Well-being Strategy 2016-2019.	Launch of AV Mental Health and Well-being Strategy 2016-2019 "to create a mentally healthy workplace".		
Ambulance Victoria[108] 2016 Australia	Mental health and well-being policy strategy.	The strategy focuses on four key strategic objectives: • Understanding the mental health and well-being needs of our people • Promoting mental health at all levels of AV • Delivering comprehensive mental health interventions and training throughout the employee life cycle • Strengthening our mental health and well-being partnerships		Actioning the four key strategic objectives: • External review to identify best practice organisational well-being strategies • More targeted, frequent and useful research to determine: ▪ How mental health is impacted through different stages of the employee's life cycle ▪ Unique workplace factors that lead to higher suicide rates at AV compared with other emergency service providers ▪ Mental health needs of all staff ▪ Why corporate staff appear to experience higher levels of depression, anxiety, and stress than operational people ▪ Impacts on their family and social supports • All Ambulance Victoria staff and volunteers will be trained in mental health awareness

Source, date, country	Source type, focus	Question 1: Programs/resources to support mental health & well-being of Paramedics/Ambulance Officers and Call-takers	Question 2: Informal & indirect provisions for post-critical stress incidence (e.g., time on-road, leave, change in duties) or enforced retirement, & influence on superannuation/financial stability	Question 3: Innovations proposed to manage stress, psychosocial or physical consequences of work-place stress in Australian context (e.g., policy, legislation, industrial agreements)
				• Improved communication, collaboration, and partnerships
American Addiction Centres[79] 2014 USA	Website for private healthcare providers.			The National Emergency Number Association recommends that 911 call centres create an eight-hour course for employees on recognising and handling the effects of stress. Also, it has been suggested that de-briefing call-takers on the outcome of their calls would be a big step towards closure, as most operators never know what happened after the call is over.
ABC News[80] 2018 Australia	Online news story. Experiences of former paramedic.	NSW Ambulance stated that it provides "evidence-based mental health support and treatment services to employees" (access to chief psychologist, 24-hour chaplaincy, grievance contact officers, peer support officers, trauma psychologists, promotion of messages to staff about the importance of seeking help early). From March 2018, a 3-day well-being workshop will be implemented.	The former paramedic said they felt harassed when the ambulance service questioned the amount of leave taken.	The former paramedic suggested fitness and psychological evaluations that happen before starting the job, and continuing throughout their careers, as usual practice for all staff to avoid singling out individuals.
ABC News[74] 2018 Australia	Online news story. Senate Inquiry.		Senate Inquiry told of 'an unmaintainable pace of work, substantial workload and unreasonable management was equally to blame' for paramedics' mental health problems and that, 'paramedics were reluctant to use the mental health services available as they feared QAS	

Source, date, country	Source type, focus	Question 1: Programs/resources to support mental health & well-being of Paramedics/Ambulance Officers and Call-takers	Question 2: Informal & indirect provisions for post-critical stress incidence (e.g., time on-road, leave, change in duties) or enforced retirement, & influence on superannuation/financial stability	Question 3: Innovations proposed to manage stress, psychosocial or physical consequences of work-place stress in Australian context (e.g., policy, legislation, industrial agreements)
			would be told and they would receive disciplinary action.'	
ABC News[109] 2018 Australia	Online news story. Call-takers' stories.	Call-takers have employee support services, team leaders are trained in mental health, and the opportunity to have time off.		
ABC News[67] 2018 Australia	Online news story. Call-takers' supports.	Since April, therapy dogs like Honey Bear have been visiting NSW Ambulance staff weekly as part of a pilot program aimed at reducing stress and lifting morale.		
ACT Ambulance Service [65] 2014 Australia	Commissioned literature review. Organisational culture focus.			Detailed analysis of concept of organisational culture and change, detailed description of published studies on organisational culture and models for change. e.g., London Ambulance Service - The key principles underpinning the improvement program were: • Communication • Staff involvement and empowerment • Modernisation and service redesign • Management capacity and capability • Vision and values • Structures and systems
Benefits Canada[110] 2016	Online news story. Government investment into	The Ontario government investment to support the Paramedic Association of Canada in developing a new mental health standard for		

Source, date, country	Source type, focus	Question 1: Programs/resources to support mental health & well-being of Paramedics/Ambulance Officers and Call-takers	Question 2: Informal & indirect provisions for post-critical stress incidence (e.g., time on-road, leave, change in duties) or enforced retirement, & influence on superannuation/financial stability	Question 3: Innovations proposed to manage stress, psychosocial or physical consequences of work-place stress in Australian context (e.g., policy, legislation, industrial agreements)
Canada	paramedic mental health.	paramedics, i.e., To establish standards around pre-incident training and education for frontline staff and their families, as well as an increased focus on consistently available psychological support, prevention, and resilience, instead of the current reactive model.		
Beyondblue[83] 2016 Australia	Electronic resource. Good practice framework for mental health and well-being of first responders.	The Good Practice framework for mental health and well-being in first responder organisations: • A strategic and integrated approach to mental health • An evidence-based framework of preventative measures • A positive approach to mental health, by encouraging organisations to actively promote well-being as a core part of business • The need for shared responsibility key principles for creating mentally healthy workplaces • Practical guidance to promote the mental health and well-being of a first responder workforce • A comprehensive set of actions for organisations to examine their		

Source, date, country	Source type, focus	Question 1: Programs/resources to support mental health & well-being of Paramedics/Ambulance Officers and Call-takers	Question 2: Informal & indirect provisions for post-critical stress incidence (e.g., time on-road, leave, change in duties) or enforced retirement, & influence on superannuation/financial stability	Question 3: Innovations proposed to manage stress, psychosocial or physical consequences of work-place stress in Australian context (e.g., policy, legislation, industrial agreements)
		approach to mental health and well-being • Guidance about support that can be provided to first responders who develop a mental health condition		
Black Dog Institute & Mental Health Commission of NSW[111] 2016 Australia	Organisation Website. Release of government strategy by researchers.			Release of the Mental Health and Well-being Strategy for First Responder Organisations. Strategic Objectives: • Promote and support the good mental health and well-being of first responders throughout their career • Develop strategies to reduce the risk of mental disorder and promote mental resilience amongst first responders • Create a culture that facilitates early identification of mental health problems in first responders and encourages early help-seeking • First responders who develop a mental disorder receive high quality, evidence-based mental healthcare • The unique factors associated with first responder activity are acknowledged and appropriate systems put in place to mitigate and identify the mental health consequences of repeated trauma exposure • Continue to build an evidence-base to better understand the mental health of first responders

Source, date, country	Source type, focus	Question 1: Programs/resources to support mental health & well-being of Paramedics/Ambulance Officers and Call-takers	Question 2: Informal & indirect provisions for post-critical stress incidence (e.g., time on-road, leave, change in duties) or enforced retirement, & influence on superannuation/financial stability	Question 3: Innovations proposed to manage stress, psychosocial or physical consequences of work-place stress in Australian context (e.g., policy, legislation, industrial agreements)
BBC News[112] 2016 UK	Online news story. Stories from paramedics & initiatives promoted in the UK.	'The Duke and Duchess of Cambridge and Prince Harry Heads Together campaign'. Charity organisation Mind's 'Blue Light Champions Programme'. The London Ambulance Service offers resilience training, counselling services, a peer support network, and has recently set up two quiet zones near the control rooms in Waterloo and Bow where staff can go when they need time to reflect.		
CSA Group[113] 2018 Canada	Website promoting professional standards. Professional standards developed upon commission by Paramedic Association of Canada.	Organisational and Practice Standards to help paramedic workers and their employers to: • Raise awareness of associated stigma, self-stigma, and harassment • Systematically identify sources of stress and psychological hazards • Examine changes and control measures that can be implemented to address those hazards Standards are informed by research and the 2013 National Standard of Canada for Psychological Health and Safety in the Workplace.[114]		

Source, date, country	Source type, focus	Question 1: Programs/resources to support mental health & well-being of Paramedics/Ambulance Officers and Call-takers	Question 2: Informal & indirect provisions for post-critical stress incidence (e.g., time on-road, leave, change in duties) or enforced retirement, & influence on superannuation/financial stability	Question 3: Innovations proposed to manage stress, psychosocial or physical consequences of work-place stress in Australian context (e.g., policy, legislation, industrial agreements)
East Midlands Ambulance Service NHS Trust[115] 2017 UK	Government service media release. Refuting media claims about levels of stress and lack of supports.	EMAS stated that it offers the following supports to its ambulance staff: • A network of volunteers in Peer to Peer and Pastoral Care Worker schemes • A full time Chaplain and Staff Support Lead in post • Trained TRiM practitioners (Trauma Risk Management) – PAM Assist 24/7 confidential phone line and Occupational Health Services • Managers have been trained in anxiety, stress, and depression to help support staff struggling with mental health difficulties • Resilience and well-being workshops in Emergency Operations Centre to support staff to manage their well-being • Weekly electronic staff magazine featuring articles from their Mental Health Lead and Freedom to Speak Up Guardian giving advice and signposting colleagues to useful resources or services providing mental health advice and support		Exploring new ways to support colleagues, working closely with partners, including The Ambulance Service Charity (@TASCharity) and Mind Blue Light (@mindbluelight).

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		Zero tolerance approach to abuse or assault against staff. Local Security Management Specialist team work with staff to support them through the process of giving statements to the Police and Crown Prosecution Service.		
Emergency Services Health[116] 2017 Australia	Website providing support to the profession. Coping strategies for EMS workers.	Offers five individual tips to implement in their own daily life: • Talk it out • Live a balanced life • Sweat it out (exercise) • Keep a journal (therapy) • Ask for help		
EMS1.com[117] 2016 USA	Online news story. Mental health of EMS.	The National Emergency Number Association's 9-1-1 Standard on Acute/Traumatic and Chronic Stress Management provides guidance that can be used by local officials to support all emergency services employees and volunteers: • Offer stress management training (≥ 8 hours in length on e.g., stress disorders and impacts of unmanaged stress, negative effects of the "just suck it up" culture, and specific coping skills and strategies		

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		• Provide all personnel with on-site educational materials (information about local and online resources, and how exercise, nutrition, and sleep can affect stress levels) • Ensure that all EMS personnel can participate in critical incidence stress management activities • Create or promote an employee assistance program (EAP) • Identify local therapists • Develop peer support programs • Adopt programs that incentivise 911 telecommunications professionals to make lifestyle changes to protect their mental and physical well-being		
Government of Western Australia, Department of Health[76] 2015 Australia	Report. The outcomes of the Royal Commission into suicide of paramedics in WA.		Findings: • Individual factors were "major contributory factors in their deaths" • 4 of the 5 were receiving mental health treatment/support in the period prior to their death • Well-being and Support Service could be adapted to	Recommendations: • Increasing organisational 'ownership' in well-being and support services • Broadening the organisational response to the impact of suicide and traumatic death in the workplace • Improving conflict resolution in the workplace • Reviewing performance management processes

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			better meet staff needs, volunteer and family needs, but "the organisation provides little opportunity for this" • One of the 5 people did not take prescribed meds because they thought if SJA found out, it could affect their employment • There was "general unease" about mental health disclosure and confidentiality when seeking help through support services • Widely felt that seeking help could "adversely affect" employment security and career progression • A perception that their views "were not listened to or valued by management", and offering a contrary view to management, would put a "target on their back"	• Reviewing the role of community paramedics, particularly in remote areas • Reviewing volunteer recruitment process • Developing an employee engagement strategy and action plan • Independent Oversight Panel established to examine workplace culture and well-being
Heads Up[68] (The Mentally Healthy Workplace Alliance/ *Beyondblue*)	Online news story. Early outcomes of Ambulance Victoria strategy.	"We have a 24-hour support line, and over the past six or so months, calls to that line have tripled." "People are using different language around mental health."		

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2017 Australia		"Strong support from AV's leadership team and mental health awareness training for all staff … has been a critical factor in the strategy's initial success, with several senior leaders sharing their stories openly about their own mental health journeys."		
Learning and Development Professional Australia[118] 2016 Australia	Online news story. Mental health training for paramedics.			As part of the Ambulance Response Time Rescue Fund, the Victorian Government are providing $2.7 million for initiatives to support paramedic health and well-being, including $1 million for the mental health training. Partnership between Ambulance Victoria and *Beyondblue*.
Mind[119] 2016 UK	Organisation website. Update on outcomes of program.	Since March 2015, the 'Blue Light Programme' has seen: • 300,000 information resources disseminated • Over 5,000 managers participate in line-management training • Over 440 emergency service staff register to be 'Blue Light Champions' • 54 Blue Light employers and 9 national associations sign the Blue Light Time to Change pledge - a commitment to raising awareness of mental health, tackling stigma, and enabling staff and volunteers		

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		to talk more openly about their mental health at work		
Northern Territory Government, Department of Health[66] 2017 Australia	Review. Northern Territory (NT) road ambulance service		Stakeholders are overly-focused on organisational self-interest. There is a great need for closer partnerships between the major road ambulance provider and the health system (hospitals and health clinics) and other medical retrieval providers. Many examples of poor communication and a lack of leadership and goodwill to achieve better outcomes were identified.	Legislation should be brought into the NT Parliament to regulate ambulance service provision. Involvement of health service providers in future development, management, and monitoring of the SJAANT Contract is a priority, particularly with the need to ensure collaborative and consistent approaches to clinical protocols and complex decision-making relating to dispatch coordination.
NSW Ambulance[75] 2017 Australia	Organisation Report on inquiry into Violence towards ambulance staff.	'The review identified that NSW Ambulance provides a robust suite of staff support services and has embarked on providing preventative measures for occupational violence over recent years. Although much has been achieved within the organisation, a more systematic and strategic approach is needed to strengthen and further enhance safety for our employees.' Examples: • Anti-violence campaigns • Anti-violence training • Mental Health Acute Assessment Team (MHAAT) Proof of Concept	While the number of claims has steadily increased, 'The average cost of each claim has also significantly decreased, possibly indicating more proactive management with the introduction of return-to-work coordinators to support and assist with early intervention strategies and an improvement in reporting culture of issues that may previously have been unreported.'	

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		to provide more appropriate care and referral pathways • Frequent User Management (FUM) program • Ongoing education, promotion, and awareness (e.g., Work Safety and Well-being Resilience Advisory Committee, Zest for Life Sirens column, R U OK? Day, Mental Health Month, Men's Health week, workshops Supporting Your Buddy and Grief and Loss during paramedic in-service training).		
OHS Canada[70] 2016 Canada	Online newsletter (Canada's Occupational Health & Safety Magazine). Presumptive coverage for workers' compensation claims.	Some provinces are taking steps to address occupational PTSD by introducing presumptive coverage: Alberta (2012), Manitoba and Ontario (2016). While job-related psychological injuries are generally covered under workers' compensation in jurisdictions across Canada, with presumptive legislation, employees who develop PTSD following a traumatic workplace event are not required to prove that their work was the cause of the disorder. This equates the PTSD bill to presumptive legislation for firefighters who have been diagnosed with cancer. In 2014, the		

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		province reversed the burden of proof for firefighters with certain types of cancer.		
Perth Now[71] 2016 Australia	Online news story. Outcomes of Royal Commission into suicide of paramedics in WA.		See details for Government of WA above – link to full report within media story.	See details for Government of WA above.
The Age[81] 2015 Australia	Online news story. Response to coroner reports/increased rates of suicide of paramedics in Victoria.			Psychological testing for all new paramedics. Mental health training for all paramedics and pre-employment psychological screening for all new graduates. Health Minister: "This would not mean people with mental illnesses would be excluded from the profession, because that would be unlawful discrimination. The testing would be designed to help people in the job."
The Age[82] 2018 Australia	Online news story. Reforms to workplace mental health claims.			In Victoria, Labour government pledge that ESFRs, 'will get treatment the moment they ask for it.….sweeping away the unpopular and bureaucratic claims system that can lead to months of delays for those seeking help.' A $12 million scheme that includes funding for a one-year pilot of a new system, which will then be rolled out to cover all mental health injuries for ESFRs.

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				No cap on the expenses for medical appointments, medications, or hospital admissions. Pledge to establish a research Centre of Excellence in ESFR in collaboration with *Beyondblue*.
The Council of Ambulance Authorities[120] 2016 Australia	Electronic Sector Magazine, Australasian Ambulance.	'Keep your hands off our Ambos' public campaign – Within 2 months of campaign launch, incidents of violence and aggression had dropped by 45% compared with the same period the previous year (overall 30% since 2015 commencement). QAS - Violence Prevention program. NSW - 'No Excuse for Triple Zero (000) Call-taker Abuse' campaign. NSW Ambulance employee engagement, well-being, and resilience educational programs adopt a whole-of-organisation approach and are designed to support staff at key points during their career (e.g., Respectful Workplace Training, Coping with occupational stress induction courses, "traumaAssist").		
The Daily Telegraph[121] 2015 Australia	Online news story. Former frontline workers alleged bullying, racism,	The NSW services claimed, "prompt action to contact, debrief, and support staff involved in traumatic patient responses (denied by staff). NSW Ambulance has increased support for all staff, including		

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	and discrimination by management).	employing two full-time trauma psychologists, expanding the non-denominational chaplaincy support team across NSW, and engaging more peer support officers" and expanding managerial training programs for senior frontline managers focused on supporting staff with welfare, PTSD, and stress-related issues.		
The Guardian[72] 2017 Australia	Online news story. Former paramedic on topic of paramedics and suicide.		The paramedic reported, 'Rostered 12-hour shifts which almost never finish in under 13 hours; missed meal breaks to attend more calls; threats to place poor performance markers on our record if we book ourselves unavailable to use the restroom more than once per shift … Rather than immediate referral for six sessions with a psychotherapist, available to all employees, any request for help is almost universally met with the question: "Are you sure this is the right career for you?" This is followed by almost daily phone calls hounding for a return to work and questioning our commitment to the communities we serve."	
The Guardian[73] 2017	Online news story.		Understaffed services. 'We're meant to work 12-hour shifts. But it's never just 12 hours;	

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UK	Pressures on paramedics.		it's usually 13, 14, or 15. And we do four shifts in a row. The closure of ambulance stations is a massive issue too.' 'Stress is very common, especially among those who've been on the job for 15-20 years; their coping mechanisms aren't as fresh as among the younger paramedics.'	
The Guardian[122] 2015 UK	Online news story. Call-takers' stories.		'Nights, days, weekends, bank holidays, public holidays … call-takers work 24 hours a day, seven days a week, and there is often little chance to stop and breathe. Sometimes, there aren't enough to meet demand, resulting in dropped calls where lives can be put at risk.' Call-takers' needs are largely invisible.	

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The Herald[123] 2016 Australia	Online news story. Call-takers' stories.	"If control centre supervisors are aware that a staff member has undergone a stressful or traumatic call, steps are immediately taken to offer assistance and this interaction is recorded in the Staff Support Activation and Significant Events Support Register with appropriate action taken to support the staff member as required. "A range of other measures, including formal debriefings, taking staff off call-taking duties, providing them with time out and counselling from senior managers, professional counsellors, peer support officers, or chaplaincy support is also available to staff 24/7 as needed. All control staff undertake training in triaging and managing Triple Zero (000) calls, skills which assist them to recognise and provide appropriate support for their peers if they identify an issue."	One call-taker stated, 'under his industrial award, he was entitled to one meal break during his 10-hour shift. There was also a "gentlemen's agreement" to give call-takers a 10-minute break per hour, but only if possible'. Call-taker took 2 traumatic calls within half an hour, but wasn't spoken to about it until 5 hours later. 'It was during that conversation, Matt disclosed the trouble he was having, and was given the resignation form and told to hand it in if he wanted to leave.' "If there is a high number of calls coming in, then workers are simply instructed to stay at their phones and plough on."	
The Spectator[124] 2014 UK	Online news story. Increasing pressures faced by paramedics.		London Ambulance Service management's response to increasing demand and associated pressures – reported to be using more 'Surge Purple' responses, regardless of whether these are needed, that only increase pressure on staff and increase adrenaline and chaos,	

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			i.e., Response from management has been to push staff even harder.	
The Sydney Morning Herald[77] 2015 Australia	Online news story. Workforce mental distress and organisational culture of neglect and ridicule).	Self-medication: "substance abuse is common, and psychological support for one paramedic was advice to "drink a bottle of bourbon, watch some porn, and you'll be right ... current and former paramedics have accused the service of abandoning them to deal with their psychological and physical injuries alone …". A former paramedic … said she spent months in a sector office that its inhabitants referred to as "the dungeon". "There were six of us there at that time, and no-one ever checked on us, no-one ever gave us anything to do, we just sat there on our chairs."	"Some have been waiting for years on a reduced salary until they can be medically retired, though they are unable to return to their duties, while others have been parked in empty offices without work …. Injured workers receive 26 weeks on full pay before they drop down to the statutory rate of about $470 per week until they can return to their former duties or be medically retired and receive a payout." "There's an unwritten rule that after 10 years of service, you become a liability. It's a lot cheaper for the ambulance service to employ new staff than to try and fix the old ones."	Calls for "a dedicated support unit staffed by professional counsellors similar to that run by the NSW police, saying the chaplains and peer support program were inadequate to deal with serious mental health problems."
The Sydney Morning Herald[125] 2016 Australia	Online news story. Release of government strategy.	NSW Emergency Services Mental Health and Well-being Strategy: "places prevention at the forefront of mental healthcare, with staff encouraged to be aware of potential issues from the beginning of their career." Strategies include: the promotion of staff well-being throughout their	Interviewed paramedic reported that the most effective support was speaking to colleagues, family, and the peer support officer.	

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		careers; developing resilience; creating a culture that identifies mental health problems early and encourages people to seek help; acknowledging the consequences of repeated mental health trauma; and evidence-based interventions.		
US News & World Report[78] 2018 USA	Online news story. Former paramedics/ EMTs.		Critical-incident response teams exist. However, EMTs are dissatisfied with the mental health services provided by their employers. Some respondents felt the counsellors available to them through employee assistance programs were not equipped to deal with the needs of emergency personnel. Counsellors who went on shift ride-alongs and spent time at sites observing the culture were seen as more competent. This role is unique and not just any counsellors will do.	
State Government of Victoria[69] 2015 Australia	Government consultation report. Ambulance Performance and Policy	The 2014 People Matter Survey shows significant concerns about bullying. Half of respondents identify having witnessed bullying, 28% had experienced it, and 9% reported currently experiencing bullying.	Reports a range of increased pressures on ambulance staff: • Reduced response time • Delays in dispatch to code 1 incidents	Proposed reform opportunities include: • Address Ambulance Victoria's culture (paramedic workforce at times feels undervalued and disempowered) • Ambulance Victoria's newly-established Psychological Health and Well-being Consultative

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	Consultative Committee.	Paramedics expressed concerns about the lack of transparency and bureaucracy surrounding internal and external investigations. Some regard the approach as escalating issues rather than looking for solutions, resulting in increased stress for paramedics. Paramedics expressed significant concerns about internal and external conduct investigations. Some regard the approach as overly bureaucratic, not transparent and escalating issues unnecessarily. It is seen as procedurally unfair and highly stressful.	• Increased time at hospitals (ramping) • Increased public demand for ambulance services • Unacceptable levels of dissatisfaction and disengagement, workplace fatigue, injury, and violence, which impact on their health and well-being WorkCover claims (8 standard claims per 100 FTE per annum, 650 lost time injuries per annum – manual handling (70.5% of all claims); worse than average industry standards. Occupational violence represents 2.6% of all claims, with more than 1,350 reportable incidents over the past six years.	Group will focus on better understanding psychological well-being, suicide, and post-traumatic stress disorder (PTSD) Introduce reforms that aim to: • Better understand the drivers behind the low levels of staff satisfaction and poor culture of Ambulance Victoria • Improve relationships across Ambulance Victoria's workforce • Better understanding the issues that impact on them (including psychological well-being, suicide, and PTSD) and explore opportunities for collaborative initiatives between management, staff, and unions • Reduce the incidence of, perceptions, and concerns surrounding incivility, harassment, and bullying in the workplace and occupational violence • Collaboratively develop and trial more flexible rostering arrangements to support both paramedic and operational needs • Improve transparency and public accountability for complaints by the public in relation to ambulance services • Support the transition to retirement for older paramedics • Improve paramedic education, training, and development programs

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WA Today[126] 2018 Australia	Online news story. Release of new research on ESFRs.		Study reported that 'three in four first responders who made a claim for psychological injury due to their work found the current workers' compensation process to be "detrimental to their recovery."' Poor workplace practices and culture are equally debilitating as exposure to trauma.	

Appendix 9: Grey literature – Summary of dissertation literature

Author, date, country	1: The dissertation question	2: Coping strategies/innovations proposed to manage stress, psychosocial, or physical consequences of workplace stress in Australian context (e.g., policy, legislation, industrial agreements)	3: CASP audit
Arce[19] 2018 USA	Qualitative study that employed a theoretical approach consisting of a review of documented literature, and qualitative data from that literature. The study examined evidence for efficacy of psychological first aid (PFA) and critical incident stress debriefing (CISD) to determine which of the 2 models is better for first responders following critical incidents: RQ1. How is CISD effective in helping first responders with PTSD symptoms or other work-related symptomology? RQ2. How is PFA effective in helping first responders with PTSD symptoms or other work-related symptomology? RQ3. What is the preferred method of debriefing among emergency agencies? RQ4. What are other environmental or social factors that can help improve or enhance the use of PFA or CISD? Mobile first responders in this study included Royal Canadian Mounted Police, volunteer firefighters, law enforcement officers, Vietnam veterans, ambulance personnel, and Red Cross Volunteers.	Findings in the literature suggest that CISD helps responders to manage stress in the long-term. Debriefing is an appropriate intervention after a crisis and during the immediate impact phase. Individuals experiencing acute stress with the inability to regain normal functioning responded well to PFA. Debriefing is effective in helping first responders after a critical incident, but is not harmful, as previously thought. Debriefings, and the social support which is included, allow first responders a forum to discuss matters that are upsetting and stressful and thereby, to alleviate the effects of trauma. Implementing effective debriefing promotes good mental health for first responders, improves work performance and patient care, longevity, and overall mental health. PFA is ideal for treatment immediately following traumatic incidents, in conjunction with CISD as a way of promoting longevity and overall positive mental health for first responders.	
Arsenault[20] 2016 USA	Phenomenological discussion with 10 paramedics on work-related stress – in-depth interviews. Distress arises from critical incidences. Influences are: • Individual traits (debate in literature on whether stress develops post-employment or initially - findings tend towards predisposition model)	Impact of stressors: • Personality change • Stimulation seeking • Trauma junkies • Anxiety and hyper vigilance • Identification with patient	Semi-structured interview. 10 EMS. All levels, including volunteers. 1,000 hours experience.

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	• Organisational factors within workplace Symptoms: • PTSD • Substance use disorders • Major depressive disorder • Absenteeism • Difficulties with home environment Treatment: • EMS workers not willing to access help	Relationship impact. Physical impact (fatigue, sleeplessness, diet). Level of PTSD higher in EMs population than general population in the USA. Findings: • Sense of fulfilment • Diverse range of experiences • Purpose/being part of a team Stressors: • Working with vulnerable populations – paediatric/elderly/death/interaction with families • Pay seen as too low • Shift length and work-week structure • Scene safety issues • Being perceived different from police and fire • Personal connection to patient/suicide/uncertainty and second guessing Other strategies: • Negative: ▪ Confrontation ▪ Distancing ▪ Self-controlling ▪ Escape-avoidance ▪ Alcohol and substance use	Recruited through letters to services and snowball. Clearly outlines questions and why they were asked. Usual data storage. Debriefing of participants occurred.

Author, date, country	1: The dissertation question	2: Coping strategies/innovations proposed to manage stress, psychosocial, or physical consequences of workplace stress in Australian context (e.g., policy, legislation, industrial agreements)	3: CASP audit
		• Positive: ▪ Accepting responsibility ▪ Problem-solving ▪ Positive reappraisal ▪ Social support ▪ Humour ▪ Religion ▪ Talk therapy either with family or peers or professionals ▪ Keeping some distance from work ▪ Hobbies ▪ Continuing education ▪ Normalising responses Emotional suppression strategy correlated with PTSD Recommendations: • Debriefing must not be from a script • Mental health providers should have knowledge of the field • Developing a personal connection with therapist is important • Helping colleagues who are reluctant to talk • Developing fitness for practice • Shifting agency culture	

Author, date, country	1: The dissertation question	2: Coping strategies/innovations proposed to manage stress, psychosocial, or physical consequences of workplace stress in Australian context (e.g., policy, legislation, industrial agreements)	3: CASP audit
		• Single session de-briefing may have harmful outcomes (suggestion that it is offered too soon)	
Dicks[24] 2014 Canada	• Do Canadian 911 operators suffer from PTSD symptoms due to their experiences with the traumatic incidents of others? • What is the prevalence of PTSD symptoms in 911 operators? • What coping methods do 911 operators utilise? • Are there other factors that may be affecting the level of stress experienced by 911 operators? • What is the nature of 911 calls that are most likely to cause fear, horror, or helplessness among 911 operators?	Coping mechanisms included drugs and alcohol. Mentions typical coping strategies, compassion fatigue/same as secondary trauma. Approximately 80% had one symptom of PTSD.	Six organisations, mixed methods. 146 respondents completed. Survey and then interviews. Survey used the Post Traumatic Stress checklist and Lazarus and Folkman 'The Cope inventory'. 20% male/80% female. Qualitative component was written on survey.
Dow[21] 2018 USA	Grounded theory study that outlines paramedic stress triad theory. Three areas: personal, environmental, and organisational. Stress in EMS: • More stress due to paper work • Seen as an occupational hazard Personal Stressors: • Paramedic's personal response and reactions to stress • Stress changes over a career? • Spousal support/competition with marriage of two members • Chronic cumulative stress can lead to burnout - not just one event, but build up and cumulative • Is spirituality a part of your life?	Major solution is education and training. Interventions: • Personal coping methods • Training in academy for stress exposure and management • Peer support • Critical incident debriefing	Grounded theory using focus groups within the Chicago Fire Brigade that includes paramedics. Focus groups occurred according to grade to reduce power differentials.

Author, date, country	1: The dissertation question	2: Coping strategies/innovations proposed to manage stress, psychosocial, or physical consequences of workplace stress in Australian context (e.g., policy, legislation, industrial agreements)	3: CASP audit
	• There are generational differences in what causes stress and stress responses: older drink, younger addicted to Facebook Environmental Stressors: • Stress from civilians and other stakeholders for what paramedics do • Worst runs are midnight • Burnout • Morale in EMS - tension between venting and cynical culture Organisational Stressors: • Agency stressors • Supervisor's role in mitigating subordinate stress - most interviewees found management difficult • The EMS Coordinator's role in mitigating paramedic stress • Organisation responds to crisis, rather than pre-empting or spotting paramedic in crisis • Stress of trauma that occurred in the past • Shift work		
Meaney-Pieroway[22] 2014 USA	Families may share in critical incidents and their own trauma is compounded by symptoms of first responder. Data suggests that with this sample, at least, First Responders have PTSD symptoms that are as severe as a known group with a diagnosis of PTSD. Secondly, the support of a spouse seems very important for the reduction of PTSD symptoms. Finally, spouse/partner support may work by allowing the person with PTSD to feel a sense of hope. This may occur by reducing the amount of self-focus, as evidenced by the number of "I" statements.	While the study used qualitative methods to collect the data, analysis was a statistical content analysis. Having a partner in treatment is beneficial to the first responder as less focus on the self and shared hope in recovery, and issues around marriage relationship impacted by trauma can be addressed.	Discourse context analysis – qualitative collection of free text, but statistical analysis of words used, number of times used. CASP.
Pare[23]	By applying data from the participants' post-traumatic lived experiences to the mapping of emerging pathways to Post-	Some support for the theoretical PTG model of Tedeschi and Calhoun, but also revealed some	Sample of 10 fire fighter paramedics and

Author, date, country	1: The dissertation question	2: Coping strategies/innovations proposed to manage stress, psychosocial, or physical consequences of workplace stress in Australian context (e.g., policy, legislation, industrial agreements)	3: CASP audit
2013 USA	Traumatic Growth (PTG), the researcher's intent was to investigate the data to reveal pathways to PTG. Findings revealed. Asks is PTG an outcome or a process? The study looks for individual differences and common themes in PTG. Used Moustakas (1994) transcendental phenomenological approach and positive psychology. What do first responders' post-traumatic experiences reveal about the present theoretical pathway to PTG developed by Tedeschi and Calhoun (1996, 2009)? Conversely, what do first responders' post-traumatic experiences reveal about alternate pathways that lead to PTG?	evidence of negative changes. Further research to clarify pathways to PTG was advised. Key themes: • A desire to help people • Personality: optimistic, caring • Guilt is the most often mentioned theme linked to PTSD: Difficult cases, babies, dealing with family Coping strategies leading to PTG: Social support and talking issues through and maintaining balance in life. Negative strategies: • Avoidance • Drinking • Internalising • Less trusting • Cynical • Fear of risk for self Other changes: • Changes in faith • Respect for life • Separating work from personal life • Putting family first • Always on guard • Survivors reach out to community	police officers/first responders, who have been on the job for at least five years, a mid-sized Virginia city. Used Van Kaam method of analysis. Researcher self-reflective. CASP in file.

Author, date, country	1: The dissertation question	2: Coping strategies/innovations proposed to manage stress, psychosocial, or physical consequences of workplace stress in Australian context (e.g., policy, legislation, industrial agreements)	3: CASP audit
		There is no definitive pathway from PTS to PTG. Male first responders seek social support, but also keeping it inside. Female first responders seek therapy and medication - acknowledging it. PTSD can occur well after event.	

Appendix 10: Grey literature - Table of current research

Source	Research topic	Contact details
Auckland University	*Well-being across occupations in the emergency services: a mixed methods study Auckland University of Technology*[86] Charmaz's constructivist paradigm used to investigate how first responders' (police, fire, paramedics) experience well-being. Kristen applied evidence from the field of positive psychology to investigate whether salutogenic models of health (i.e., health promoting), to supplement existing models of health, resulted in better health outcomes for emergency service personnel. • Sense of calling is key to well-being • Suggests that building on this sense of calling/vocation may contribute to mental health and well-being more than any other strategy • Highlights the interaction between operational and organisational work stressors – hence building resilience against the trauma on road insufficient, as majority of paramedics found organisational stressors more difficult than operational • Stressors are the multiple agendas of organisation and its personnel • Support came from collegiality • Tool – Learning from mistakes, collegiality and trust, competence and confidence, problem-solving, clarity of purpose, negotiating skills, navigating and evaluating success • Sense of calling promotes PTG (findings inconsistent with Pare)[23] • What can organisations do: ▪ Opportunity for team-building ▪ Understanding one's own calling and organisational blocks - acceptance and commitment therapy Focus on team resilience, rather than individual resilience.	Dr Kristen Hamling Email: cst5310@autuni.onmicrosoft.com
Beyondblue	*Answering the call - measuring the health and well-being of police and emergency services personnel*[84] Stage three of this research project currently in progress. It is a project to assist services to develop appropriate strategies to deal with first responder mental health and well-being. *Good Practice framework and well-being in first reponder organsations* Provides a framework for a resilient workplace.	

	Queensland Ambulance Service Paramedic Safety Taskforce[91] Focus on strategies to reduce violence towards paramedics.	
Charles Sturt University	A randomised controlled trial investigating the effects of a 24-week workplace exercise program on physical fitness and injury rates of Australian paramedics. Australian New Zealand Clinical Trials Registry, number: U1111-1198-6051.	Sandy MacQuarrie, Jayden Hunter, and Sam Sheridan Dr Jayden Hunter Accredited Exercise Physiologist (ESSAM AEP AES) Lecturer, School of Exercise Science, Sport & Health Charles Sturt University Panorama Ave Bathurst NSW 2795 Telephone: 61 2 6338 4522 Email: jhunter@csu.edu.au www.csu.edu.au
Charles Sturt University	*The Paramedic Preceptor Experience: Improving Preparation and Support*[93] Highlights the stressful role of preceptorship not mentioned in the thesis. Notes that part of the role of the preceptor is to assist the novice to deal effectively with trauma.	Hamish Carver Email: hamishcarver@yahoo.com
Charles Sturt University	Clare Sutton has commenced a PhD study on paramedic resilience.	Clare Sutton Email: csutton@csu.edu.au
Charles Sturt University	*IPAWS: International Paramedic Anxiety and Wellness Study*. This is a longitudinal study examining the psychological well-being of paramedic graduates in the first five years of their career. The focus is on establishing baseline data on mental health, well-being, burnout, resilience, job satisfaction, and attrition. The study will provide answers to four inter-related questions: • What is the trauma profile of paramedic graduates and does psychological well-being (including indicators of PTSD, burnout, anxiety, and depression), social support, and resilience change during the first 5 years of paramedic service? • How do Australasian paramedics compare internationally? • Are there existing training and support practices in tertiary education or in the occupational setting that improve resilience and moderate the psychological impact of trauma among international paramedics, and if yes, what can we learn from them? • Do changes in job satisfaction, social support, or psychological well-being impact on paramedic attrition? Currently, 28 centres from New Zealand, Australia, Canada, Finland, South Africa, the UK, and the USA (p. 132).[89]	Clare Sutton FHEA UK Discipline Lead & Lecturer Paramedicine School of Biomedical Science Charles Sturt University Panorama Avenue Bathurst, NSW Australia Tel: +61 2 6338 4022 Email: csutton@csu.edu.au www.csu.edu.au

	Clare is the lead for the CSU (Australia) recruitment site, but the Chief Investigator is Dr Elizabeth Asbury, Whitiriea, New Zealand.	
Charles Sturt University	January 2019: *Fostering resilience in Australian Paramedic Students' trial: translating a Canadian online program to CSU* The focus is on students rather than operational staff.	Clare Sutton Email: csutton@csu.edu.au
Council of Ambulance Authorities	Made reference to *Beyondblue*.	Dr Emma Bosley Director QAS Information Support, Research & Evaluation Unit Email: Emma.Bosley@ambulance.qld.gov.au
Edith Cowan University	*Work-related stress of front-line emergency roles*[127] Survey on work-related stress for employed and student paramedics. Research in progress.	Lee Waller Email: rooboy740@gmail.com http://www.emergencypersonnelresearch.com/
Edith Cowan University	Honours in Psychology project on paramedic well-being commencing in 2019.	Dylan Meldrum Paramedical Clinical Coordinator School of Medical and Health Sciences Edith Cowan University 270 Joondalup Drive, Joondalup, WA, 6027 Telephone: 6304 3932; 0428 906 593 Email: d.meldrum@ecu.edu.au
Elizabeth Goble	Completing PhD on informal culture of coping with stress in Paramedic service	Elizabeth Goble College of Nursing and Health Sciences Flinders University Elizabeth.goble@flinders.edu.au
Griffith University	*Improving people management in emergency services*[85] This publication has been summarised in greater detail in Appendices 11, 12, and 13 under Submission 115 to the Senate Inquiry into mental health conditions experienced by first responders, emergency service workers, and volunteers.	Keith Townsend Email: k.townsend@griffith.edu.au

	• A provisional PTSD diagnosis can be made for 9-10% of emergency services employees • More PTSD symptoms are reported by employees with long-term employment • Linked to working conditions, e.g., no downtime given work pressures, lack of meal breaks, and return-to-base provisions • Changes in workforce profile from middle-aged blue-collar men to young women and men • Organisational factors such as hours worked impact on individual resilience • Anxiety and fatigue major problems • Study measures health of the HR system as a factor in employee PTSD • Employee support systems vital, as is social support • Employee support systems - formal – (recommend open access to psychologist of choice), education and training from university program, and continuing training for managers including frontline managers, and opportunity for employee voice, informal support from management, peer support programs, support from colleagues and family • Idea of high reliability management: organisation that puts reliability, safety, and resilience over productivity profits and performance (p. 39) • Training in resilience needs to be preparatory and post-employment • Need career pathways alternative to on-road	
Monash University	Have identified paramedic health as an area for future research, particularly around work intensification.	
Monash University	Brodie Thomas is currently undertaking a Cochrane Review focusing on organisational interventions to reduce incidents of violence against health workers, including paramedics.	Brodie Thomas Email: B.Thomas2@latrobe.edu.au
Peter O'Meara	Currently undertaking research on 'Violence against paramedics' funded by the Falck Foundation.	Professor Peter O'Meara Email: p.omeara@icloud.com A/Professor Richard Brightwell Telephone: 0429 102 709 Email: Arghbee@gmail.com
Paramedic Australasia	Special Interest Group focusing on the mental health and well-being and conduct a conference each year. https://www.paramedics.org/mental-health-well-being/ https://www.paramedics.org/resources-paramedic-mental-health-well-being/	Lisa Holmes Australia Ari Peach New Zealand Cassandra McAllister

		Manager-Governance & Corporate Policy (National Office) Telephone: 61408972155 Email cassandra.mcallister@paramedics.org www.paramedics.org
St John Ambulance WA	*Research into Australian emergency services personnel mental health and well-being: An evidence map.* Australian & New Zealand Journal of Psychiatry, 2017.[41] This publication is also summarised in Appendices 1, 3, and 5 as part of the systematic literature review. • Study undertaken as a scoping exercise for the *Beyondblue* study. Summary of research that has been completed and gaps • What current evidence exists regarding the mental health and well-being of Australian emergency services personnel? • What areas are, and are not, well researched? • Most common studies deal with relationship between organisational factors and mental health well-being • No studies on suicide, personality, stigma, pre-employment factors that might impact on well-being • No studies found that investigated self-harm to self or others, or bullying, or substance use An unpublished literature review is available upon request.	Donna Lawrence Clinical Psychologist Well-being and Support Manager Telephone: 0447 163 012 Email: Donna.Lawrence@stjohnambulance.com.au

Appendix 11: Grey literature (submissions) – What is the problem, what causes the problem and what is missing?

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
Senate Inquiry submission 9 Stephen Heydt, Healthy Minds Clinical Psychologists[96]	• Shift work can have a significant detrimental impact on the mental health of emergency service personnel • Paramedics may be required to perform duties that they find confronting due to experiences in their personal lives. For example, being stationed at a highway location known for motor fatalities following the death of their partner and children in a fatal motor vehicle crash	• An absence of effective delegation and accountability regarding the care of personnel is evident in all emergency organisations at different times • Alternative employment opportunities in public services could be provided and seen as a natural transition with benefits remaining intact • Many emergency service personnel become dependent on their current income which may be reduced in other work • Few emergency service personnel retire in good spirits and feeling optimistic about the future. Many will have been performing at a low level professionally in their final years while experiencing deterioration in their mental health. This issue starts much earlier than upon retirement • It is common for insurance claims to be initially approved and then rejected, and vice versa. They may be challenged by services without censure from reviewing authorities. Additionally, the worker may experience numerous changes in case managers throughout the process • Insurers show little appreciation for the cumulative effects of trauma, requesting details of the 'trigger' event
Senate Inquiry submission 14 Retired Ambulance Association of Victoria Incorporated[128]	Aspects of first responder work that impact health and well-being: • Abnormal and long working hours • Trauma associated with responding to life-threatening and dangerous situations • On-going exposure to antisocial behaviours such as personal verbal abuse and violence as evidenced by recent court cases in Melbourne • Continuing contact with severely injured and/or traumatised time critical patients and situations The sudden cessation of employment associated with these aspects of first responder work can also lead to delayed mental health issues such as PTSD.	• First responders have not sought effective mental health support due to "bad" workplace practices • The working environment and lack of sensitivity from senior management has led to first responders feeling the need to conceal their condition • Little guidance regarding the ongoing management of mental health issues is provided • Many former emergency first responders have been left with undiagnosed clinical conditions and little, if any, support from internal or external organisations. Contact with these individuals can be difficult and due to their experiences, this contact is sometimes rejected either by the individual or their families

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
Senate Inquiry submission 15 Royal Australian and New Zealand College of Psychiatrists[129]	Australian paramedics have reported experiencing high levels of fatigue, depression, anxiety, stress, and poor sleep quality. The mental health of non-operational and operational first responders and emergency service workers (including dispatchers) can be influenced by a number of factors: • Exposure to trauma/critical incidents (either a single event or repeated exposure including vicarious trauma) • Working conditions and occupational stressors (long hours, physical exertion, interpersonal conflict, and budgetary constraints) Rural and regional ambulance workers face unique issues, including treating personally-known patients, working alone, and long response times.	• Volunteers may not be seen as permanent team members and therefore may not be identified as being at risk of developing mental illness, or be supported by standard safeguards • Volunteers and first responders in rural areas may have limited access to mental health services, particularly psychiatrists, due to geographical barriers and stigma There is a need to streamline and improve the management of mental health conditions by insurance and compensation agencies. Problems that have been identified include: • Organisational conflicts of interest • Frequent changes of staff • Agitating, confrontational, or aggressive environments • Occasional aggression, bullying, and stigmatisation from independent medical examiners First responders need to have access to medical practitioners who are aware of the contributing factors, circumstances, and presentations for individuals in this profession. Emergency services personnel often have poor social support while on sick leave, restricted duties, or medically retired. Recommendations: • Increase awareness and mental health literacy to encourage early help-seeking behaviour • Implement ongoing support, reviews, and well-being checks • Ensure programs and services are evidence-based • Provide support for workers to transition into other roles or out of the emergency services workforce
Senate Inquiry submission 20 Peter James[98]	• PTSD can be triggered by a particular case (including those in the past or on an anniversary) or may be cumulative • Early career trauma which the person has less experience to cope with often stays with them and re-emerges in later career memory as seminal events	Paramedics sometimes attend jobs that are high profile which potentially require support and policies and procedures to manage these events both during and after. • Provision of regular mental health training at significant career points (e.g., induction, supervisory role, etc.) would be beneficial

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
	• The role involves overwhelming working hours, unpredictable cases (including threat to their own life), and jobs that conflict with worker's values • Lack of validation of experience by service and peers. It is an injury that cannot be seen	• Little training provided to managers regarding the mental health impact of emergency medical services (EMS) work. Management need to be proactive, not simply reactive once a problem has occurred. More transparency and consistency is needed regarding how issues are managed and clearer communication is required • A central contact person is needed to liaise between the individual, the ambulance service, and the insurance company on worker's compensation cases • There is little resource allocation for employee welfare. Mandatory funding is required for the monitoring and treatment of workers relating to well-being • Mental health issues are often not reported due to stigma. Seen as a "career killer" • Current prevention and monitoring of staff well-being is seen as "lip service". Management should also focus on promoting positive mental health in the workforce • Workers' compensation system is seen as adversarial. The employee is seen as a liar until proven otherwise. The onus should be on the employer to prove that the employee is not injured, not the other way around • Employees are isolated from the workforce while off work. Ambulance services are also seen to abandon workers once their compensation process is completed. The ambulance service does not respond in an on-going and timely manner when workers off sick, during return-to-work programs, or abide by the agreements and provisions for return-to-work. Returning to work can be a demeaning experience due to the allocation of menial duties • A lack of training has resulted in a lack of empathy from managers regarding mental health • Paramedics are unsure of the role of support providers (e.g., multi-service Critical Incident Stress Management (CISM) Team) • Employee assistance schemes will only fund a limited number of visits to mental health professionals

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
		• Existing counselling services may not be adequate if the counsellor is not familiar with first responder work • Multiple failures to provide debriefing following traumatic incidents have been identified • A sense of embarrassment was experienced about receiving support from a mental health professional • Emergency service workers are generally goal-oriented, want to win against the odds, and regard their values as primary to their identity. Conflict is created when these principles come into question • Training in self-care and warning signs of raised stress levels should be updated as part of yearly professional development programs
Senate Inquiry submission 21 Mr John Rathbone[94]	• Medically retired in August 2017 after 26 years' service as a front-line paramedic, due to a diagnosis of Post-Traumatic Stress Disorder with suicidal ideation	• Mental illness as a direct consequence of being a first responder is frequently ignored by managers at all levels, regardless of the implementation of specific policies to aid and address such serious issues • "Our lives and welfare have value and reason, maybe not so much within the political ranks outside of the media, but certainly to our wives, husbands, children, family, and friends, but also to our community who year after year, vote us as being the most trusted profession within Australia" • "Look after those who are left and those who are starting, this is not a new concern, it has been an issue since I started my career in 1992. Please make it stop"
Senate Inquiry submission 25 Mr Malcolm Babb[95]	• 44 years in service, 29 years as an educator and Critical Care Paramedic. Attended over 2,000 cardiac arrests, 2,500 motor vehicle accidents, deceased including children, assaulted – not reported and considered for a long time as part of the job, shot at, knife fights, and witnessed a murder suicide • Retired with PTSD	• Not supported by employer with no offers of support and directed to retirement with no post-retirement support and regarded as the problem • Problems not self-identified, but informed by management of a "personality change" • Recognised, needed, and wanted to leave, but was refused unless a specific retirement date was confirmed • Industrial body failed to act on behalf of employee

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
		• Forced to attend an independent medical review while on sick leave which was stated in reference to WorkCover, but no claim had been filed • Cost of legal action is prohibitive • Lack of transparent communication and failure to share independent medical report for 3 months with GP • Missing is the support to retire on full remuneration and private health support
Senate Inquiry submission 28 Mr James Watkins[130]	• 10 years as a paramedic and 4 years as a volunteer • Concerns began with mild anxiety and constant thoughts of work and sought help from GP and psychologist • Over-critiqued for performance with little feedback leading to feelings of practice failures and avoidance behaviours to avoid harsh clinical review • Under-supported by employers	• Seen as a worker's compensation claim with no support for the individual to allow help to be sought and prevent financial strain • Management only 'mildly' supportive • Informed with no communication that an appointment for an independent medical assessment had been made just prior to leave. No contact from senior staff, human resources, or organisation, and organisation refused to pay sick leave • Support required to return to work and engage positively with a job that is part of their identity
Senate Inquiry submission 34 Health Services Union, Tasmanian Branch[97]	Problems in mental health in the ambulance service primarily occur in three ways: 1) Repeated and long-term exposure to danger from various trauma events, 2) Sequential stressors or an accumulation of stressors, 3) Time-limited stressors, generally related to a specific major incident • The higher incidence of PTSD in ambulance staff when compared to other services may be attributable to the nature of the work (including what they do, see, and hear) and lifestyle issues relating to shift work • Jobs that can be particularly difficult include: knowing the patient, paediatrics, murder-suicide, mass casualties • Fear of making a clinical error can cause undue stress and worry which can feed a mistake through the anxiety associated with error correction	• Downtime is rarer in urban ambulance services and there are constant ongoing pressures to 'beat the clock' in terms of response time management and general under-resourcing across the service • Policies and procedures relating to employee well-being are often difficult to find and interpret, resulting in incorrect application, or no adherence at all • Support systems and welfare assessments are an afterthought and risk management strategies are rarely applied to individual circumstances • The support provided by Ambulance Tasmania appears to be aimed at just "ticking the boxes", with some staff instead financing their own external mental health support • Having routine, regular check-ins with a mental health professional who is onsite or easily accessible would assist to improve the culture and stigma around mental health; however,

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
	• Having to frequently pass the scene of a difficult job can be confronting • Paramedics may unduly blame themselves for the outcome of a job • What is true in terms of a trigger for one individual is not necessarily true of a trigger for another, and confronting jobs are not always those involving "blood and guts" Internal stressors include: • Overly-bureaucratic processes about the work environment • Safety reporting being poorly managed and reports being closed without resolution or appropriate action • Clinical issues, changes to processes and procedures are muddled, overly-complicated, or not consulted on at all with practitioners • Equipment and supplies bound by procurement policies and tender processes	services such as psychologists or psychiatrists in the workplace are rare except for major trauma events • Ambulance Tasmania commenced a Peer Support program in 2017; however, the program is viewed as ineffective due to inadequate agency support. The program consists of 9 trained support officers, with a lack of resources placing the training of additional officers in jeopardy. At times, no peer support officers are available, either locally or via a phone service. The peer support dedicated staff who have been trained in mental health first aid are required to provide peer support in a timelier fashion • All state government employees have access to an Employee Assistance Program (EAP); however, it does not provide around-the-clock coverage. The after-hours answering machine call-back service reportedly does not generate call-backs when requested • Managers generally have little training in human resources or management • The provision of organisational support services may be impacted by current workload and geographical obstacles • Following a grievance, the 'disciplinary process' sometimes takes priority, followed by an offering of an EAP service which is seen as tokenistic and focusing on the symptoms rather than the cause of the problem • When suspicions of medication theft arise, a suspicion of theft investigation process is commenced by the service; however, little consideration is given to the reasons for which the theft may have occurred. Welfare checks on people who have allegations put or implied are scant • Concerns around the confidentiality of support services pose another barrier to help-seeking. This may result in injuries being underplayed or not reported, which may then delay the submission of a workers compensation claim, making it invalid • Ambulance workers are often working in the mental health space with patients, and to subject themselves to the same processes and individuals that patients encounter can in itself be traumatic Unlike physical injuries, admitting to a mental health injury is perceived as career-ending, or having the potential to inhibit career

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
		progression. Organisational culture perceives workers as weak if they request mental health support. Additionally, workers who make a mental health claim are often considered to be liars or troublemakers, or faced with an attitude of "suck it up princess, I have had that too. Get on with it". • Workers' compensation claims for psychological injury are significantly disputed and are subjected to more rigorous challenges than claims pertaining to physical injuries • The onus of proof remains with the worker, requiring them to prove the existence of a psychological injury while already unwell. The process of making a claim sometimes further injures the worker • Psychological injuries must be reported to the employer and insurer within a specific timeframe after the injury. On one occasion, case law has determined that 48 hours was too long a delay, resulting in a rejected claim • Workers Compensation claim applications require the claimant to identify a specific incident, failing to take into consideration the cumulative nature of occupational stressors • Insurers can cease compensation payments, including medical expenditure coverage and payment of weekly wages, by way of a 'reasonably arguable case' or contrary 'medical opinion'. This requires the individual to either abandon their claim or return to work due to financial pressures. Returning to work is likely to make the issue worse, and legally make it more difficult to prosecute their position of incapacity by way of disease attributed to work • HACSU Tasmania believes that PTSD should be a presumptive illness for all ambulance workers who provide first response services, as with firefighters • Normalising management interventions and a 'no blame culture' would contribute to employees receiving appropriate support in a timely manner • Unlike other professions, exposure to a particular event is followed by an automatic stand-down from duty or interventions

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
		before returning to work is not practice within Ambulance Tasmania • Clinical errors are not generally seen as an opportunity for further education about how to avoid recurrences, potentially leading paramedics to mistakenly feel that no-one else would have made the same mistake • Particular symptoms (e.g., mood swings, irritability, rebelling against authority, low tolerance) can lead to exclusion and managers viewing employees as "difficult" making them less likely to provide assistance, thereby exacerbating the mental health injury and complicating return-to-work programs • The national registration of paramedics under the national law would mean paramedics may be required to make 'mandatory reports' to AHPRA should they seek mental health treatment. However, the criterion for this is unclear. Mandatory notification may discourage paramedics seeking mental health support or treatment, especially if a non-practicing period is likely to be imposed, or restrictions placed on duties performed • Ambulance personnel may have limited options if required to perform non-operational duties as part of either short- or long-term injury management • There is a lack of services for personnel who have left the ambulance service; for example, post-retirement and/or those who have left due to mental health injury Recommendations to the Senate: • Mental health injury needs to be treated without disdain • Determinations should be made about best practice outcomes and for recommendations to be made in order to achieve them • Seek alignment of workers' compensation legislation regarding mental health and that an evidence-based approach is taken for the best health outcomes, including considering making recommendations about presumptive legislation, or at least a less adversarial method of dealing with first responders who make mental health claims

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
		• Make recommendations about how investigations are conducted relating to self-medication, including recommending what type of procedures and support services should be mandatory around these events • Make recommendations about peer support and psychological services which should be provided to employees. We suggest that a national crisis list of suitable practitioners is available on a 24/7/365 basis for professionals who know first responder roles that can provide specific crisis interventions/responses • Make recommendations about safe staffing levels for on-road and call-taking environments. Maximum on-task times and break times need to be considered, especially in relation to communication centres, which have come to resemble 'call centres' in design and nature with little regard to the life and death situations faced by those working in that environment • Make recommendations about minimum mandatory training for trainers, managers, and educators in ambulance organisations • Make mental health first-aid training mandatory for all ambulance employees
Senate Inquiry submission 44 Australian Paramedics Association (NSW)[131]	• Stress, anxiety, depression, nervous breakdown, and symptoms associated with ongoing exposure to traumatic events • Exposure to traumatic events (with traumatic events compounding over time) • Exposure to workplace and occupational violence • Sexual harassment and bullying in the workplace • Poor management of identified issues at work • Other work pressures • Excessive work pressures, conflict between individuals, significant workload, and a lack of clear direction or support from NSWA managers about these issues. This is exacerbated by a lack of support from colleagues and peers	• High intensity workload and exposure to trauma • Poor communication, low levels of support of professional and personal development, lack of clarity regarding organisational objectives, lack of clarity around role and scope of duties and responsibilities, career stagnation and uncertainty, lack of opportunities for promotion, wages, job insecurity, significant responsibility with minimal control over decision-making and work, social, and physical isolation, poor relationships with other workers and managers, conflict in the workplace, lack of support within the workplace, bullying, harassment and sexual harassment within the workplace, conflicting demands of work and home, poor work-life balance, suitability and maintenance or repair of equipment and facilities • Adequate reporting mechanisms with ease of access and mobile application – currently inadequate • Rigorous follow-up to incidents is required

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
	• Eating disorders, gastric upset, sleep disorders, mood swings, sexual impotence, poor interpersonal relationships, poor social skills, isolation and despair, acute and chronic medical issues • Overloaded or underloaded, lack of control over the pacing of the work, prolonged considerable time pressures, inadequate times for rest and sustenance, poor or totally absent feedback on performance	• Workplace culture which categorises mental health as inconsequential and associated stigma – akin to "suck it up, it is part of the job" • Broader training for peer support • Improvement of workplace culture must be underpinned by relevant and recent policies and guidelines that are implemented and enforced • Assessing organisation-wide culture, emphasising workplace civility and staff engagement, teamwork building inclusive of crew resource management, leadership training, anti-bullying programs and guidelines, mindfulness and stress reduction programs, burnout coaching and training • Investment is needed in retirement planning and post-retirement transition support
Senate Inquiry submission 51 The Council of Ambulance Authorities[132]	• Although exposure to trauma is seen as an underlying cause for PTSD, workplace culture and practices also contribute to the prevalence of mental health conditions	• Mental health needs of the workforce change as people transition through various stages of their career. Each group from interns to retirees encounter different challenges and have different needs • Workplace culture impacts on mental health including stigma related to work-place mental illness • Stigma may contribute to a reluctance to seek help for mental health conditions, potentially leading to outcomes such as suicide • The resources allocated to employee welfare vary in accordance with the resources available at each service • The implementation and oversight of mental health support appears to be up to individual organisations • Psychological injuries occur less often than physical injuries, yet generally result in longer absences from work and higher associated costs. The injuries need to be adequately monitored and barriers to reporting need to be addressed • Family members of paramedics may also require mental health support

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
Senate Inquiry submission 52 Ms Sally Jones[133]	• Specifically focused on Volunteer Ambulance Officers (VAOs) • Economic benefit of emergency service volunteers was more than three billion dollars per annum • The demographic of volunteers is made up of:[134] ▪ 55% are females ▪ 60% are aged between 30-50 years ▪ 81% are either married or partnered ▪ 83% work either full- or part-time ▪ 52% have completed secondary education ▪ 46% have completed tertiary education ▪ Average length of service is 5 years with exit rates increasing after 2.5 years ▪ 60% are interested in medical/first aid field (Fahey & Walker, 2002) • The prevalence of post-traumatic stress disorder (PTSD) in ambulance services is up to 8.4 times higher than the national average[135] • Work-related trauma and related distressing events such as exposure to events where they feel unsafe, fatigued, or confronted • Organisational stressors e.g., management issues, bullying, harassment, burnout, inadequate resources, or training • Personal issues e.g., family conflict, personal health • Personal factors e.g., adaptive and maladaptive coping strategies, personality traits, pre-existing mental health concerns • Relationship to the person they are attending e.g., personal connection	• VAOs experience a high level of work and personal related stress, but do not always receive or accept offers of support following a critical incident • Community expectation that the personnel responding are able to assist in their time of need. However, many first responders themselves are suffering from stress, anxiety, depression, or suicidal thoughts • Suicide rates in emergency service personnel are four times higher than the national average and suicide of ambulance paramedics is three times higher than police and fire (National Coronial Information System (NCIS), 2015). As previously highlighted anxiety and depression is also much higher than the national average • Early identification, early intervention, and early access to suitable support services can help with better managing the psychological and emotional stress and distress experienced by all first responders • Best practices that are evidence-based so that we can more deeply understand, analyse, and evaluate issues pertaining to increasing the positive mental health and well-being of volunteers • Employee Assistance Program (EAP) available to support first responders and not having a 'one size fits all' approach • Federal Government to consider and provide more funding to support a mentoring program and shared resources which could ease the burden on states that do not have the budget of other states, therefore, removing a financial barrier that may be preventing some services from offering the level of staff support that they would like • Early identification, a standardised risk/hazard assessment tool so that identification of psychological injury can be identified earlier and a framework to appropriately address this is in place • Early access and early intervention, mentoring and shared resources, research, families, retired officers
Senate Inquiry submission 56	• Small community and many jobs involved people they knew and often had to transport to hospital for declaration of life extinct	• Delayed comprehensive diagnosis and support

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
Ms Sarina and Mr Kevin Laidler[136]	• Large role for volunteers • Family become carers and often take on the burden which the system does not take into account	• Management not aware of the number of deaths attended and delays and difficulties with communication • Comprehensive education and training of staff and management is crucial • Significant stigma associated with declaration of mental trauma and illness • Lack of specialised support within existing peer/and extended organisational formal programs. Very limited follow-up after events • Referral and feedback by team to services including medical practitioners is limited and restricted • Discussion with management was almost non-existent • Access to specialist care is difficult and often requires financial and other burdens, such as having to travel to get care, and being away from individual supports such as family and friends during recovery • Increased demand has reduced access to services and specialists (both specialists, psychologists, and psychiatrists, had closed their books and outpatient services are limited) • Workers compensation claims are difficult to negotiate for volunteers and proof of injury is hard to establish. Continual re-assessment for workers compensation and claims disrupts recovery and re-traumatises the individual
Senate Inquiry submission 57 Paramedics Australasia[137]	• Paramedics Australasia is the peak professional organisation representing practitioners who provide paramedic services to the community • Paramedics Australasia has addressed the health and well-being of paramedics in its Australasian Competency Standards for Paramedics, which states that paramedics are responsible for developing and maintaining their fitness-to-practice by: ▪ Understanding the need to practice safely and effectively ▪ Understanding the need to maintain high standards of personal conduct	Systematic review of rescue workers found higher levels of post-traumatic stress disorder (PTSD) in paramedics compared to the general population. 10% of rescue workers met the criteria for PTSD. Paramedics had the highest prevalence of PTSD (14.6%)

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
	▪ Understanding the importance of maintaining one's own physical and psychological health ▪ Accepting personal responsibility for continuous professional development to maintain currency of knowledge and clinical skills	
Senate Inquiry submission 60 Adjunct Associate Professor Ray Bange[6]	• Studies have shown that paramedics suffer greater than normal occupational injuries, often associated with the movement (e.g., carrying and lifting) or extrication of patients • They also suffer disturbingly high levels of Acute Stress Disorder (ASD) and Post-traumatic Stress Disorder (PTSD) and other forms of mental distress • Paramedics may miss meals and tend to work longer hours than the rest of the employed population with 36 per cent of paramedics working full-time working longer than 49 hours per week compared to 26 per cent of the wider population (2011 Census analysis) • They suffer greater than normal psychological harm as a work-related injury. This may manifest itself in different ways including various stages of mental distress and post-traumatic stress injury (PTSI - aka post-traumatic stress disorder or PTSD) and even progress to suicide • Independent coronial data indicate that one police officer, paramedic, or firefighter in Australia takes their own life every six weeks, and experts have warned that emergency workers are not getting the support and treatment they need • "The particular occupational hazards arising from traumatic incidents that ambulance officers attend, means this workforce carries a foreseeable risk of psychological injury. The body of literature points to the probability of developing post-traumatic stress disorder and the risk arises from the cumulative exposure across the course of a career." Review of St John Ambulance Health and Well-being/Workplace Culture (2016) • Paramedics have access to addictive drugs such as fentanyl, morphine, and ketamine, and are exposed to risk of diversion to support addiction (an acknowledged risk among those with access to these drugs, including doctors and nurses)	• Need to enhance the culture of paramedic services as a key to reducing paramedic mental distress Recommendations cover a range of initiatives including the: • Establishment of a National Health Care Commission • Adoption of a 'health in all policies' strategy to drive national policy initiatives • Establishment of a national collaborative research and policy unit for first responders • Introduction of legislation to cater better for mental health illness and compensation • Establishment of an Australian National Paramedic Services Standard • Independent accreditation and licensing of all paramedic service providers • Oversight of all paramedic services through an appropriate care and quality monitor • Inclusion of paramedic representatives in health policy and safety frameworks • Inclusion of mental health and addiction content as part of accredited paramedic education Also: • Enhanced internal service communications and management accountability including: measures designed to overcome bullying, harassment, and discrimination; proposals for early identification, rapid and sensitive response, and effective support designed to enhance the mental health and well-being of

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
	• They operate in uncontrolled environments that are subject to an increasing level of physical abuse and assault. Regular exposure to potentially traumatic events, including threatened or actual physical assaults, are associated with increased risk for the development of mental injuries, including post-traumatic stress injury or disorder (PTSI/PTSD), major depressive disorder (MDD), panic disorder (PD), generalised anxiety disorder (GAD), and social anxiety disorder (SAD), as well as vulnerability for an alcohol use disorder (AUD) • Identified internal stressors include allegations of poor communication, bullying, harassment, intimidation, discrimination, breach of confidentiality, favouritism, conflict of interest, and nepotism as part of organisational culture. A recent survey completed by members of the Australian Paramedics Association in NSW indicated that 73% of survey participants had experienced bullying, harassment, or discrimination with similar results in Northern Territory and Western Australia • Key concerns raised by paramedics are that support from senior colleagues is often lacking, and paramedics were themselves responsible for initiating any calls for assistance regarding exposure to critical incidents or the display of any symptoms of psychological distress. An unwillingness to recognise and understand the signs of distress has been noted by employees across all jurisdictions as being part of the culture of paramedic services • Negative aspects of paramedic work are being exacerbated by the growing prevalence of abuse and assault in the field • Internal communication problems are a common complaint with paramedics left feeling isolated and helpless during periods of great personal stress. One can imagine the shock and perceived disrespect when a paramedic is confronted by the following [reported] comment: "That's the way it's going to be - so suck it up. There are plenty more paramedics who are available to take your place ..." - Anonymous Manager • Evidence also suggests that daily, lower-level stressors may be related more closely to the development of psychological illnesses than an isolated single critical incident. The Australian Centre for Post-Traumatic Mental Health note accumulated exposure to	paramedics and other personnel; and mandatory tracking and reporting of mental injury as an occupational health requirement • Indications are that those in need of care are not being identified early enough. In addition, there are significant cultural obstacles that deter them from seeking the care they require, including misplaced concerns that professional identity requires the withholding of personal emotions • Strong support for a strategic action plan supported by rigorous and robust research, including a full epidemiological study to support mental health • Paramedic Association of Canada – developed standards for sector-specific guidelines for psychologically healthy and safe workplaces • Raise awareness of associated stigma, self-stigma, and harassment • Systematically identify sources of stress and psychological hazards • Examine measures that can be implemented to address these hazards • US Vicarious Trauma Toolkit • Importance of organisational culture and morale in achieving a physically and mentally healthy workforce. The core meaning of the work will always contain elements of risk, romance, and excitement, but the routine pressures placed on paramedic services, resource shortages, and massive demand are making 'real ambulance work' harder to realise • Better training and development of middle level and supervisory staff may need to be a priority in changing the internal service cultures • A seldom-mentioned factor in the interplay between services, management, and paramedics is the past absence of national paramedic registration. That situation had the practical effect of making public-funded paramedic services the entities responsible for recognition of a person as a paramedic. It also opened up avenues for subtle (and more overt) bullying and intimidation

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
	traumatic events, as opposed to exposure to a single significant incident, can manifest itself in serious psychological illness • Poor morale and personal distress can lead to a more serious PTSI/PTSD, with the onset initiated by a series of lesser events, including inappropriate management responses that corrode trust • Process of sensitisation, where repeated experiences of less traumatic incidents result in progressively more severe reactions • Extent to which a specific incident is personalised through identification with the environment, event, or the victim. Sensitisation and personalisation play important roles in modifying the resilience and vulnerability of the individual	• Other ramifications from the absence of independent registration include the intermingling of disciplinary and fitness-to-practice issues; the lack of independent public engagement and transparency in determining fitness-to-practice; the inherent dangers of conflict of interest; and the potential variations in investigation standards and outcomes • Absence of independent reporting mechanisms, including formal external reporting. Internal anonymous 'help' or 'hot' lines with specialist help attuned to the circumstances of the profession may assist those suffering distress or reporting grievances • Resilience training, mindfulness, and coaching are commonly advanced as solutions to practitioner mental health problems, but ignores the problems with work environment, culture, and places a negative moral value on those that may be struggling
Senate Inquiry submission 66 Sirens of Silence[100]	• Toll on family, friendships, relationships, and it "slowly clouded where my attention\was directed, you tell yourself you're ok and nothing is wrong, you continue on job after job, day after day and then one day it all comes crumbling down around you, and you didn't even notice it happening, in your eyes all of sudden your life has changed forever" • Physical (spinal) injury caused by patient changed ability to work – "like having leprosy, you're looked upon as 'faking it'", little support from managers or OHS and no alternatives for recovery • Suicide and suicidal ideations a large part of the burden • Colleague - "walked directly out of a meeting with management and stepped straight into the ambulance garage and suicided with toxic levels of her paramedic drugs" • Bullying appears to be systemic, if not condoned, and does not appear to be consistently addressed • Victims offered little to no support; bullying or intimidation from their management • Reliving the event/s, sleep disturbance, stopping you from interacting with family and friends, forced to put on the 'social face'	• The recognition of prolonged exposure • The support to understand why trauma lasts and frames out the positive • Breaches of confidentiality - preventing many from seeking assistance via their EAP for fear of disclosed information, retribution, and a breach of trust with peers • Lack of trust in middle and senior management • Under-reporting at inquires due to intimidation and fear of retribution • "May be related to its paramilitary roots and an inability to progressively transition to a professional standards-based organisation" - Independent Oversight Panel Review of St John Ambulance (page 72)[138] • Culture of 'suck it up princess' behaviour still exists within all three emergency services in Australia • 'Many emergency service personnel feel they can condition themselves to deal with every person's worst day everyday, but they cannot condition themselves to the fear, the intimidation, and the bullying or isolation tactics by management

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
	• Horrendous and emotionally-breaking situations daily, training could never prepare for the experience • 'High adrenaline, fast ebb and flow of situations, high turnover of jobs, and high fatigue impacts the human body more than is given credit'	
Senate Inquiry submission 73 Australian Paramedics Association Queensland[139]	• APA Qld relies upon the Parliamentary Inquiry Submissions of Safe Work Australia as evidence that generally, claims for serious mental disorder by ambulance officers and paramedics have been consistently trending upwards over the past 10 years. Number of paramedics affected by mental health conditions is higher than the number of mental health conditions reported • Evidence collected from paramedics 2014 • QAS continue to outwardly communicate that they are appropriately managing mental health conditions while the evidence to the contrary mounts • Unsustainable pace of work and excessive workload • Safe Work Australia recognises that the pace of work and an excessive workload contributes to the risk of psychological injury • Constant time pressures imposed on paramedics to be available for dispatching to their next patient • Delay in being available for dispatch (including where a paramedic may be cleaning out the ambulance from the previous patient), QAS has taken disciplinary action or required the paramedic to explain what they were doing during that time • Coping strategy to limit the amount of time talking about work outside work hours so it doesn't take over their lives or family time - over a period of time, coupled with the inability to emotionally deal with events during their shift has caused or contributed to their mental health condition • Extended shift times and the definition of reasonable time for overtime - disciplinary action against paramedics for refusing to work a shift extension • Employers have a legal obligation to minimise exposure to work-related factors that can increase the risk of work-related stress	• Barriers to reporting are the political environment with industry and the need to bring serious and systemic issues to light • Self-reporting would increase in a safe supporting environment • Will not access counselling services through the peer support network because of a real or perceived mistrust in the confidentiality of the service and regional/rural paramedics have less access to peer support and small community might know family • The actions of management contribute significantly to the workplace culture and the way mental health conditions are experienced by paramedics • Need for time to process and debrief • Key to reducing the effects of work-related stress is to understand what organisational and environmental characteristics may lead to stress in the first place • No workload control measures in place to mitigate or limit the risk of mental health conditions • Too fatigued to deal with any of the emotions triggered during their shift and this has a compounding effect on their mental health • Attendance at traumatic incidents is inherent with the paramedic role; however, obvious risk mitigation has not been implemented Opportunities for improvement and solutions (to be discussed further at a public hearing). • A policy which limits the maximum number of cases (or code 1 cases) a paramedic is able to be dispatched to per shift • A mandatory stand-down for a period following a complex or traumatic case

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
	• Psychologically injured by attending to a traumatic event in the course of their employment and that the psychological injury has caused or contributed to a mental health condition *Submission73_Att01_Australian Paramedics Association Queensland* • Workcover claims are horrendous to navigate • Supporting claims by obtaining evidence from other QAS employees who have been involved in conversations which support the claim. The difficulty in achieving this is that there are no witnesses to many of the conversations that are carried out between management and employees in Ambulance Stations in remote areas *Submission73_Att02_Australian Paramedics Association Queensland* • Media coverage and how it is done and responded to • Management has in the past (and continues to) pose a serious risk to the lives of paramedics because of the way drug and mental health issues are managed. APA Qld has witnessed paramedics being treated by QAS management in such a way that disturbingly, in the circumstances, suicide would be unsurprising *Submission73_Att04_Australian Paramedics Association Queensland* • Lack of confidentiality and adversarial case management from service and union • "Question whether serving a Notice of Suspension on an employee in a mental health facility is appropriate" after failed suicide attempt • Media and academic reports released lately regarding mental health and suicide relating to paramedics • 'Putting on the end of a Notice of Suspension the Priority One blurb when phones and computers are not permitted in the mental health ward probably isn't overly helpful'	• Shift extensions are limited to avoid the increased risk to psychological injury • An increase in paramedics to assist in coverage of the high-demand areas so that paramedics in those areas do not experience the continual pressure and demand, and consequently, the risk they are currently exposed to • Fear of disclosure, potentially will be medically retired, employee will not accept injury as work-related, and further stress going through the process and trying to prove injury, unsuitable alternative duties – meaningless tasks and financially disadvantaged • Internal support program also offer an external specialised program • Investment of funds and resources into mental health services available to paramedics, is unlikely to be a contentious spend of public funds • A policy perspective, the implementation of mandatory or minimum standards, or best-practice guidelines for employers in relation to the provision of mental health support and treatment services available to emergency services workers may obligate employers to meet a consistent standard and result in more employees accessing services with the aim of proactively managing mental health conditions • Peer support program available to QAS paramedics must be accessed by the employee self-identifying that they require and/or would benefit from counselling or peer support • Peer support program available must be accessed by the employee self-identifying that they require and/or would benefit from counselling or peer support • Availability of mental health services when they are immediately needed, including during work time, would assist in the accessibility of mental health services and support *Submission73_Att01_Australian Paramedics Association Queensland*

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
		• Lack of written documentation and support for claims from employer • Witnesses or supporting documentation are not often forthcoming due to fear of retribution • Cultural issues a real concern for employees • Need to be aware and provide the best opportunity for supporting witnesses to come forward during claims *Submission73_Att02_Australian Paramedics Association Queensland* • The communication between industry and peak supporting bodies is difficult and often met with no response • Requesting immediate and often crucial meetings with government, health ministers to be heard in relation to the seriousness of the issues relating to paramedic mental health *Submission73_Att04_Australian Paramedics Association Queensland* • More compassionate and appropriate way to deal with managing employees affected • Welfare checks need to be done by someone qualified
Senate Inquiry submission 74 Queensland Government[140]	*Submission 74_Att03_Queensland Government* • Research into the links between first responder and mental health conditions is in its beginning stages • Government has invested resources over many years in people, systems, policies, and education to support and manage psychological well-being • Conditions may range from acute stress reactions, mild anxiety, and mild depression, to more severe conditions such as adjustment disorder, severe clinical depression, or post-traumatic stress disorder • Previous experiences of trauma, psychological meaning attributed to the event, sense of personal control, personal values, and concomitant stressors	• Stigma continues to be a significant barrier to providing timely and confidential support services, and limits accurate data collection • Independent medical examination is requested to determine the risk of harm that an individual may experience within their work capacity

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
	• Internal organisational factors that can contribute to mental health include: ▪ Poor supervision and leadership ▪ Bullying and harassment ▪ Lengthy disciplinary investigations ▪ Work demands ▪ Poorly-managed work relationship ▪ Organisational justice ▪ Inability to obtain preferred changes to work arrangements (flexibility) ▪ Poor support (peers and supervisors) ▪ Poorly-managed change • Non-work caused psychological injuries requiring injury case management occur at an approximate rate of 4 to every 1 work-caused psychological injury. The leading causes of non-work-related psychological injury requiring case management includes marital separation or other relationship issues, past or current trauma, abuse, grief and loss, health, financial strain, and parenting	
Senate Inquiry submission 75 Mr Liam Steger[141]	• Recently been medically retired from the Queensland Ambulance Service with a diagnosed mental health condition after 30 years of service • May 2016 when condition become overwhelming after response by ambulance service • Suggested by supervisor to see counsellor in own time and appeared as a 'cost saving' exercise and staff were not valued • Income protection insurance at 75% of my base wage, which lasted 3 months before it was concluded • Under pretense of meeting with Executive Manager around renewal of rental agreement with the ambulance service for home and threat of eviction	• No alternate return-to-work support or positions with ambulance service • "Standard response to that was, "it is not the responsibility of the QAS to find you a job, you need to find one yourself and get over the issue" • While waiting for WorkCover to process a stress claim, you use up all your sick leave, annual leave, and accrued time to be told that stress doesn't exist in the organisation and that my condition is all due to 'reasonable' management action • Senior management staff seem uncertain about redeployment processes, peer support people don't truly value staff well-being, no support was ever mentioned or offered to my family, two years of indecision on redeployment is farcical, redeployment options are poor for highly-trained paramedical staff, redeployment

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	• Sent for independent psychological evaluation and Occupational Employment Assessment. After this assessment, I had to see my doctor for the evaluation results and diagnosis and then return to see the Executive Manager, which took another fortnight	options don't take into account other knowledge or academic qualifications • Budgets and key performance indicators have taken the place of loyal, empathetic, hard-working staff
Senate Inquiry submission 77 Ambulance Employees Australia Victoria[142]	• Data suggests a quarter of paramedics with a psychological claim will be absent from work for 80 days or more • Rates of mental illness for paramedics are likely considerably higher due to a prevailing issues around under-reporting, general skepticism about the prospect of success for WorkCover claims relating to non-physical injuries, ongoing social stigma around mental illness, and the prevalence of a 'culture of toughness' amongst ambulance industry employees • The Ambulance Victoria Mental Health and Well-being Strategy has identified depression, anxiety, post-traumatic stress disorder (PTSD), stress, and fatigue as the most common mental health issues affecting those working in emergency services Suicide: • Rate being four times higher than the Victorian average • Rate of paramedic suicide is three times higher than other emergency services personnel such as fire and police services PTSD: • Data suggests the rate of PTSD for paramedics may be as high as 22% Occupational Violence: • Under-reported and there is a mismatch between the reporting process and analysis against patient records • Analysis of Ambulance Victoria data from 2013-14 showed there were 3,774 occurrences of patient or bystander aggression recorded in the patient information records. Of these 3,774 recorded occasions, only 314 were reported as an OHS incident • Reasons given for this under-reporting include Ambulance Victoria's manual reporting system (considered cumbersome and time-consuming to use), logistical barriers to reporting (i.e., only opportunity is at end of shift), the view that clinical violence is an	• Ambulance officers and paramedics rank as the fifth highest at risk occupation in Australia, with a WorkCover claim rate of 4.0 claims per million hours worked. Mental health-related claims make up 8% of all WorkCover claims made by Ambulance Victoria Employees, and account for 24% of total claim costs • Proving a causal link between PTSD and cumulative exposure to work-related trauma is a major hurdle for ambulance industry employees in establishing successful WorkCover claims • The Victorian Auditor-General's Report found that of all incidents, verbal abuse and those categorised as 'mild', 'near miss', or 'no harm' were least likely to be reported. Incidents relating to strangulation, the kicking a pregnant woman in the stomach, sexually inappropriate conduct, and being kicked and punched were all found to have been classed as 'mild, 'near miss', and 'no harm' • Ambulance industry employees are also experiencing a lack of informal 'down time' to discuss and debrief between jobs. Informal debriefing is widely considered an important mechanism for minimising workplace stress • Reluctant to disclose mental health issues to management out of fear disclosure may impact career progression, or at worst, raise capacity issues; the effect being loss of role or position • Those who do raise issues and/or make WorkCover claims report frustration with the quality of their return-to-work options. Those away from work on WorkCover have reported feeling isolated, lonely, forgotten, and stigmatised • Claim acceptance, conciliation, and litigation of rejected claims can take a considerable amount of time. Throughout this process, many ambulance industry employees are left without income support and are often not provided with support relating to reasonable adjustments and return-to-work

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
	inevitable part of the job, a view that management will not respond to reports, and employee compassion and sympathy for patients whose aggression arises from a clinical condition KPIs and Workload: • Shift work, long working hours, repeated exposure to death, violence and trauma, difficult interactions with members of the public, high levels of responsibility, lack of rostering flexibility, and frequent shift extensions	Recommendations: • The Federal Government develop a National Register of Mental Health Professionals with specialist skills relating to the treatment of first responders • Mental health support provided to first responders must be specifically tailored for first responders • Increased State and Federal Funding for PTSD treatment for first responders • Creation of a region-specific Peer Support Program • Peer Support extended to support retired ambulance industry employees • Introduction of voluntary 'Keeping in Touch' days for ambulance industry employees absent on WorkCover • HSRs and Peer Support Volunteers to be notified when ambulance industry employees are away from work on WorkCover (on an 'opt in' basis) • Access to alternative duties (reasonable adjustments) and return-to-work support extended to employees prior to acceptance of a pending claim and/or exhaustion of appeals/review process following initial rejection
Senate Inquiry submission 78 Victorian Government[143]	• Recognises a broad range of work-related risk factors may affect the mental health of police and emergency service workers • Operational factors (e.g., attending fatal road accidents), organisational factors (e.g., work demands) and environmental factors (e.g., extreme temperatures when carrying out duties) also contribute to mental distress • Safe Work Australia and *Beyondblue* have identified employees in first responder organisations as being at high risk of mental injury • Work in unpredictable environments and have high risk of burnout and mental stress due to a number of organisational risk factors • Shift work that reduces their ability to access the support, supervision, and training they may require	• Rate of suicide among paramedics is four times higher than that of the general population and three times higher than other emergency services workers • Injuries under-reported – stigma a significant issue and the need for education and awareness raising is crucial • AV has strongly promoted the view across the organisation that physical injuries and mental health issues should be approached similarly (i.e., without any associated stigma) • Establishing an external network of psychologists for emergency services could ensure consistency of approach to providing client psychological support services, based on research and best practice. The network could have a role in: ▪ Identifying trends and opportunities for improvement

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
	• Healthcare workers are nearly five times more likely to lodge an occupational violence claim than other employees • Shift work, professional scrutiny, direct exposure, general life, chronic pain and illness and physical disability, occupational violence, multiple trauma exposures in their lifetime and during the course of their working lives causes the individual to experience sensitisation where repeated experiences of traumatic incidents result in progressively more severe reactions over time • Thirty-eight per cent of employees with mental injury claims take more than two years to return to work Occupational function and return-to-work arrangements: • Six months after lodging a claim, approximately 45 per cent of employees with a mental injury are not back at work, compared with approximately 18 per cent of employees with a physical injury • Impacts to be considered include: returning after a physical or mental illness; returning after maternity, paternity, or carer's leave; returning after extended leave (catch up requirements to be clinically able to do the job); impacts of family- and home-life post an extended leave period; and returning to work in a different location (e.g., regional versus rural or new branch with new colleagues)	▪ Leveraging experience and skills ▪ Ensuring a clinical approach is applied to ancillary support services such as peer support and chaplaincy ▪ Ensuring improved and coordinated access to public and private programs and support (such as through hospitals) ▪ Workers' compensation claims investigations may be stressful and may accentuate mental illnesses. Opportunities exist to introduce a mechanism for a consistent approach for organisations to interact with staff on long-term WorkCover and/or illness leave ▪ Extended to staff on long-term temporary relief rosters who may have a sense of isolation through not belonging to a designated work group ▪ There are benefits in first responder organisations collectively working more closely with insurers ▪ A more focused and collaborative approach to investment in identified research priorities and opportunities may assist with resource allocation. Research that considers implementing tools and solutions where multiple organisations can benefit would add to the ability of organisations to focus on continuous improvement of the services offered to support their staff within available resource allocations
Senate Inquiry submission 79 National Council of Ambulance Unions[144]	• Government enquiries and other investigations over past decade have delivered adverse findings around cultural issues, bullying, and harassment in various Australian ambulance services • A more coordinated, outcomes-focused approach to how we prevent harm, intervene early, and support recovery in first responders suffering mental health issues has the potential to save governments substantial sums of money, as well as improving the lives of individual paramedics • Paramedics have significantly higher rates of PTSD, and work-related mental disorders such as depression, anxiety, stress, fatigue, and suicidality than the general population • Nationally, Safe Work Australia reports that in the general worker population, 11% of serious mental disorder claims are due to exposure to occupational or workplace violence; 20% are due to	• Introduction of a federally administered National First Responders Care Network which incorporates a specialist rehabilitation provider service, with specific and accredited expertise in dealing with first responders and emergency workers and their unique circumstances • Endorsement of and mandating the use of best practice National Standards for dealing with post-traumatic stress disorders in first responder agencies • Endorsement of and mandating the use of best practice National Standards for dealing with suicide prevention in first responder agencies • Some ambulance jurisdictions do not employ systematic and evidence-based approaches to assisting employees in dealing

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	work-related harassment or bullying, and 23% are caused by work-related pressures • Safe Work Australia reports psychological injuries generally cost Australia $6bn a year in lost productivity, primarily because these claims result in three times longer away from the workplace than other claims categories Repeated exposure to trauma, has the potential to impact adversely on the onset or deterioration of mental health conditions. Other noted factors are: High job demands: • Sustained high physical, mental, and/or emotional effort is required to do the job Low job control: • Where workers have little control over aspects of the work including how, or when, a job is done Poor support: • Tasks or jobs were workers have inadequate emotional support from supervisors and co-workers, information, or training to support their work performance, or tools, equipment, and resources to do the job Poor workplace relationships - jobs where there is: • Workplace bullying, aggression, harassment including sexual harassment, discrimination, or other unreasonable behaviour by co-workers, supervisors, or clients • Poor relationships between workers and their managers, supervisors, co-workers, and clients or others the worker is required to interact with. Conflict between workers and their managers, supervisors, or co-workers is made worse if managers are reluctant to deal with inappropriate behaviours, or lack of fairness and equity in dealing with organisational issues or where performance issues are poorly managed Poor organisational change management:	with trauma, or resource the systems they have in place adequately, to meet ongoing demand for services

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
	• Low recognition and reward, poor organisational justice, remote work and isolated work, violent or traumatic events • A workplace incident involving exposure to abuse, the threat of, or actual, harm that causes fear and distress and can lead to stress and/or a physical injury	
Senate Inquiry submission 83 Australian Association of Social Workers[145]	• Role characterised by high-risk and life-threatening situations that can result in numerous forms of trauma • At the forefront of dealing with complex social issues e.g., mental health issues, trauma, family violence, drugs and alcohol, but as a workforce, may be not well equipped to deal with them • Inadequate training leading to poorer outcomes which affects well-being of all • Causes are multifaceted: uncontrolled high-stress and high-risk environment, high intensity, compounding effects of exposure, unpredictable working hours, and separation from family and friends • Common psychological concerns: depression, anxiety, adjustment disorder, PTSD, and alcohol/drug use (as a form of coping) • Prevalence rates of depression, anxiety, and PTSD are higher than in other emergency services and the general population	• Stronger supports and preventative measures are needed for individuals and their families • Social workers who work with first responders and their families see the devastation that frontline work does to them and their relationships • Addressing mental health issues is broader then just accessing support, and involves early intervention, cultural change, and removing barriers to help-seeking • Key recommendations: priority given to early intervention and education, federal framework and use COAG to implement the framework, greater consideration to families and loved ones, research and funding for evidence-based models of care, greater focus on post-retirement services, and greater regulation of counselling and mental health supports • Mental health services delivery for first responders is fragmented across groups and States and Territories • Limited attention to the effects across the lifespan and the impact on others and families • Under-reported with stigma and the culture significant in the willingness to acknowledge and receive support • Recommendations from *Beyondblue Good practice framework for mental health and well-being in first responder organisations*: shared responsibility, modifying risk and strengthening protective factors, strengths-based culture, and an integrated and holistic approach • Access to qualified and adequately trained professionals
Senate Inquiry submission 86	• Stressors include incidents that are potentially traumatic or dangerous (witnessing the result of violent crimes such as sexual and other assaults, victims of road trauma, suicides, horrific	Government oversight: • The government contract provides some measurable KPIs relating to service delivery (response and arrival time targets);

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United Voice: The Ambulance Union of Western Australia[146]	accidents, the unpredictability of working with the public, the increase in violence against on-road staff and also organisational factors (fatigue, workplace conflict, unrealistic workloads, ambitious key performance indicators) • Continual exposure to trauma frequently results in burnout, anxiety and depression, and PTSD, potentially leading to instances of intentional self-harm and suicide	however, there are no measureable indicators relating to employee health and well-being. Additionally, funding is not dependent upon service outcomes Recommendation: • State Governments ensure key performance indicators and reporting is sufficient and appropriate to hold ambulance service providers accountable to ensuring a quality ambulance service including the health and well-being of their employees Workers' compensation: • Workers' compensation schemes vary nationally in their approaches to mental injuries experienced by first responders • In Western Australia, statutory time limits dictate the period within which employers must submit a claim to insurers, and within which insurers must reach a decision. However, no time limit is placed on claims which have been declined by an insurer and are in dispute • Throughout the workers' compensation process, the employee is likely to be accumulating medical expenses, utilising personal or medical leave, and may be unable to work, leaving them without an income. This is further exacerbated in the case of prolonged disputes • The professional culture of strength and resilience among first responders may contribute to difficulty in realising the seriousness of a mental health injury, and reluctance to make workers' compensation claims until the worker reaches crisis point or cannot continue to work. This then increases the urgency of rectifying the lengthy dispute process
Senate Inquiry submission 88 Government of Tasmania[147]	• The Tasmanian Government recognises the susceptibility of emergency services personnel to PTSD and that it is precipitated by both severity and cumulative contact	• A number of programs provided for all first responders so paramedics are not singled out
Senate Inquiry submission 91 Ms. Jan Robinson[148]	• Lack of resources to do the job properly	
Senate Inquiry submission 94 Black Dog Institute[149]	• Link to exposure to traumatic events • Causation linked to cumulative exposure to critical incidents	• Need for evidence-based approach

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
	Also caused by workplace stressors that include: ▪ Unbalanced job design ▪ Atypical working hours ▪ Excessive job demands ▪ Job insecurity ▪ Role stress ▪ Organisational change ▪ Workplace bullying	• Critique of psychological debriefing. May lead to increases in stress • Suggests only use strategies that are evidence-based through randomised controlled trials • Programs need to be directed to individual workers, leaders, and the organisation as a whole • Teaching mental health prevention skills • Pre-employment screening requires more evidence to support their use
Senate Inquiry submission 95 Edith Cowan University[150]		• Approaches to improve mental health services to paramedics, volunteers, and their families should include individual, peer, organisational, community, and government policy • According to the Paramedicine Professional Competency Standards, paramedics are responsible for developing and maintaining their own personal health and well-being strategies • Recognition of the mental health impact on volunteers/call-takers, and others intimately involved or who have a frontline service role is important • Further research, and funding to do so, is required on the total mental health impact on first responders beyond PTSD (e.g., anxiety, psychosis, substance misuse, gambling) • Greater dialogue is needed between universities and industry stakeholders on how to address the mental health needs of first responders • Paramedics becoming registered health providers under AHPRA presents issues around mandatory reporting and confidentiality. Clear guidelines will be required around appropriate use of information • Help-seeking is inhibited by suspicion of reporting systems and internal processes, prompting fear of losing shifts/livelihood. Therefore, mental health support is often sought outside of the organisation

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
		• Training and peer support is required for paramedics who attend coronial inquires (pre- and post-appearance) • There is a lack of both recovery time between major traumatic incidents and appropriate support for paramedics after returning to work from time off due to stress (e.g., not being appropriately re-introduced to shift work, well-being not monitored) • Support for paramedics and first responders post-retirement should be the same for mental and physical health issues • Paramedics who leave the service due to mental health issues suffer a loss of identity, potentially exacerbating the existing problem. Mandated continuing professional development should address self-identity and transition out of the workforce • Pathways are needed for retiring paramedics, e.g., transition to teaching roles. Experienced, retired, and/or off-road paramedics could be appointed to mentoring, support, and counselling roles • Plans are required for staff retention to ensure corporate knowledge is maintained and to avoid high staff turnover and burnout issues • Governments need to ensure that the justice system applies penalties for violence against paramedics • Recommendation for the establishment of an online, single entry point resource with links to specific information for each area (paramedics, call-takers) • Recommendation for the implementation of Mental Health First Aid, including investing in training staff to become accredited trainers to then offer in-house training and support • Recommendation to establish suicide prevention and intervention programs based on current evidence and best practice
Senate Inquiry submission 101 St John Ambulance WA[151] (including report and literature review prepared by Expert Advisory Group)	Factors that may influence the well-being of ambulance personnel: • Training on resilience and the potential impact of trauma • Community expectations • Levels of clinical experience	• Trauma is a subjective experience and difficult to identify based on the objective nature of event descriptions in dispatch systems. Events that individuals experience as traumatic may not necessarily be those that automatically trigger the organisation's follow-up support process

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
	• Technology • Shift work • Connectedness with peers and supervisors • Personality clashes • Events occurring in people's personal lives • Access to psychological support	• No research currently exists to support the use of trauma tracking among emergency medical personnel • No research has been conducted to date to explore the effectiveness of compulsory mental health screening in emergency medical personnel beyond the initial screening of new recruits for paid employment. The Expert Advisory Group recommends not performing mandatory screening for psychological disorders, but instead, providing tools to conduct self-assessment • Potential problems regarding compulsory screening for volunteers include having to determine the cut-off point for suitability for the role, the potential for false positives/negatives, confidentiality, and the possibility of applicants "faking good" when answering questions • Well-being education modules may benefit from the addition of an assessment component to assess the participants' understanding of mental health • There is currently no evidence to support the effectiveness of resilience training interventions for paramedics; however, there have been promising results among police recruits • Investigating the influence of particular variables (e.g., personality, social support, coping strategies, a history of mental illness) on an individual's experience of a traumatic event may put the onus of wellness completely on the individual, ignoring the capacity of organisations to influence the mental health outcomes of employees and volunteers • Workplace belongingness is a predictor of well-being that can be modified at an organisational level though changes in workplace behaviour/culture • Problems identified by ambulance personnel in accessing employee assistance programs include confidentiality and a need to provide managers with training in the identification of staff who may need support • Communications staff may feel that support services are not designed for them and that they are left out of well-being initiatives

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
		• A lack of downtime between jobs means little recovery time, while downtime following a critical incident is perceived as beneficial by emergency medical personnel, and is associated with lower levels of depression symptoms • Little research has been conducted to explore the effectiveness of peer support programs in emergency medical personnel • The provision of peer support programs can be difficult due to the isolation of some stations, community, staff, and volunteers
Senate Inquiry submission 111 Ambulance Employees' Association of South Australia[152]	• SA Ambulance Service (SAAS) staff must deal with high public expectations, an increase in service demand, pressures to respond to calls in a timely manner, pressure to manage cost of service provision, improvements in clinical governance and review processes, and finally, maintain their focus on patient care while facing these issues	• Mental health and physical health are inseparable in our submission, and both have significant impact on life outside work • An emphasis on staff well-being is overdue considering the well-documented physiological pressures and risks that are inherent in the role • Staff safety and well-being is intrinsically linked with patient care • The lack of qualitative research on aspects of the role has resulted in a gap in workforce planning processes and the improvement of people management systems • Management culture is an important aspect of staff well-being and emergency medical service staff deserve maximum support from their employers • Recommendation: Ambulance employers and governments must adopt a much greater emphasis on staff well-being in workforce planning and service delivery considerations. This is imperative and urgent • Recommendation: Considerations, effort, and funding should be channeled into the commissioning of systematic literature reviews into the physical, psychological, psychobiological, and psychosocial health of operational ambulance staff • Recommendation: Additional research into the development of human resource management and staffing formulae that are preventative in character (the primary health care model), while recognising that post-event intervention (EAP) will always be necessary • Recommendation: Ambulance employer and employee organisations work collaboratively, using an evidence-based

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
		approach, to develop a primary health care model to ensure that the work environment is as safe as can be given the unpredictable and, at times, uncontrollable nature of the role • Recommendation: Sufficient staffing levels to allow for short-term and longer-term respite from the front-line where needed • Recommendation: Educational, professional, and personal development for front-line staff be provided that assists in the primary care model including building resilience for individuals, groups, and agencies • Recommendation: Employers cease and desist from taking an adversarial approach to injured workers. Members with physical injuries can develop psychological injuries as a result of this approach, and psychological injuries are exacerbated. Employers should provide supportive systems and processes for dealing with injured staff
Senate Inquiry submission 115 United Voice, Industrial Union of Employees, Queensland[153] (including a summary report prepared by Griffith University for United Voice Queensland, the Ambulance Employees' Association of South Australia, and United Voice Northern Territory)	• Emergency services personnel are faced with events that may be emotionally demanding, life-dependent, time-critical, or expose them to traumatic events • There is link between paramedics' work conditions and the prevalence of PTSD and other mental health conditions. Many paramedics suggested the role would likely lead to burnout and was not sustainable over the long-term • Occupational factors experienced by paramedics suffering from PTSD include longer periods and higher rates of exposure to traumatic events, exposure to different types of traumatic events, toxic substances, violence, and self-blame for perceived harm to others • Paramedics who worked longer shifts were more likely to report depressive symptoms • Ineffective support systems along with excessive hours of work and workloads were found to adversely affect resilience to trauma • Although stress levels are elevated at the time of a traumatic event, they reduce soon afterwards, with high levels of anxiety remaining as the 'prolonged psychological consequence of a past stressor'	• Factors associated with an intention to leave the profession include low social support, casual or part-time employment, and frequency of exposure to natural disasters or physical assaults • Unions play an important and valuable role, but do not have the capacity to have a daily ongoing impact on the ground • Management need to ensure that clear and effective systems exist to raise (and escalate) matters. It is vital that employees have trust in these systems • Poor communication with dispatch staff can compound occupational stressors. Potential solutions include having dispatch staff occasionally attend jobs with paramedics, and equally, paramedics spending time in the communications centre. This could also be utilised as a "break", addressing chronic stress, burnout, anxiety, and associated mental health conditions • Return-to-base provisions differ between states, and it appears to be common for meal breaks to be restricted, delayed by several hours, or to not occur at all • High workload results in limited downtime between cases. It is important that paramedics work reasonable hours and have mandatory time allocated between jobs to reduce fatigue,

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
		process trauma, and if necessary, seek formal or informal support • There can be inconsistency between which paramedics are rostered together, making it difficult for paramedics to form supportive relationships • Concerns regarding confidentiality and impact on career progression have resulted in some individuals being reluctant to talk about their psychological health, seeking support from peers and family, or obtaining psychological support at their own expense outside of the organisation • Operational pressures mean employees are sometimes unable to access peer support programs in a timely manner and some paramedics would like more control over when, how, and by who they are contacted following a critical incident • Obstacles to receiving effective supervisor support were physical proximity, time restrictions, workload restraints, and a lack of managerial training related to managing critical incidents and employee psychological well-being • Employees' willingness, capacity, and opportunity to access Employee Assistance Program services depend on workload, the timing of contact, and individual relationships • Resilience to trauma is improved by fatigue management, the provision of relevant education/training, and support that is both timely and effective. The ambulance services incorporate resilience training into their induction programs, but it is limited to a half-day program and without a consistent national approach • Only 1 in 10 universities offering Bachelor of Paramedic Science degrees advertised a unit with some content on understanding the paramedic's own mental health in the context of the work environment • New paramedics need to be educated on coping skills and resilience prior to commencing work as they could be exposed to a traumatic event during their very first shift. Failure to do so places the onus on ambulance services and individuals to fulfil this need. This is especially important given that many new graduates are young and may have limited life experience

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
		• Education on mental well-being including resilience should be introduced to graduates either by universities or via employment induction, and continued throughout the course of their career • The development of skills in having positive conversations about mental health and wellness would enable employees to provide better informal support to their colleagues • Managers expressed a desire for training in trauma counselling to better support their staff • The study recommends the formation of a committee constituting representatives of employers and unions to address the educational deficiency, and make recommendations for pre-employment and during employment resilience training and discussion. While the current scope of the available training is on self-care, education with a focus on caring for others is of equal importance
Senate hearing: Australian Capital Territory[154] 07/11/2018	• The lack of resources results in an overworked and overloaded workforce • Lack of resources often results in poor behaviour by managers, who are themselves under the pump to reach their KPIs, which are often unrealistic and unmeetable because the resources are just so thin on the ground	• Call for a national independent care network that deals with psychological injury in emergency workers and one that is actually trained in the specifics of their psychological and emotional health issues • A large amount of mistrust when there is an employer-based psychology service • Attempts at wellness and protective measures are often tick-box approaches rather than real, down-to-earth measures • No training in having trainees and lack of preparedness of trainees for the real-world role • Recommendation – to legislate for a preservation age of 60. Then an opportunity for people with advanced skills and experience to mentor and coach in those later years • Need to be 'reliability-seeking organisations' i.e., changing the focus of how ambulance services set themselves up, shifting performance measures from focus on response times to a focus on reliability, safety, and resilience
Senate hearing: New South Wales[154]	• 2017 survey: 73% had faced bullying and harassment within the workplace (from other workers and line managers); 79% of complainants felt their complaint was not taken seriously by New	

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
25/09/2018	South Wales Ambulance management; 59% of complainants' complaints were left totally unresolved • Technology, such as the IIMS system, or the Incident Information Management System, is dysfunctional • No consistent follow-up or debriefing process • There is no framework to deal with complex or significant mental health injury outside the workers' compensation process • Counsellors lack skills	
Senate hearing: Queensland[154] 18/07/2018	• Culture as a paramilitary and hierarchical organisation: directive and oppressive • Over time, the medical retirements, constructive dismissals, unreasonable management action, and terminations have created a culture: a culture of fear, a culture of under-reporting, and a workforce that does not trust that their employer will manage them appropriately • Shift lengths: being on-road for 12 hours then being told, at the 12-hour mark, that you have got to do another two hours (like running a marathon and having the finish line extended)	• Queensland Ambulance Service (AS) cultural problem, which impedes reporting of mental health conditions; staff treated as a disposable resource • Mistrust of Priority One service: an embedded peer service, perceived lack of confidentiality re: external counsellor or psychologist reports back to the organisation • PTSD guidelines: only 3 of the 27 references related to ESFRs • Claims staff are unsuitably qualified and driven by KPIs • Senior officers and the bosses seem unskilled for the management role; very task-focused • Need for a National Action Plan to bind employers to best practice across the nation • Inconsistent WorkCover systems • Mental healthcare plans; 10 sessions are inadequate/useless • Shift work means making regular counselling appointments extremely difficult • Physical health consequences of shift work • Lack of return-to-work opportunities Recommendations: • Mandatory check-in once a month • Access to those services beyond the conclusion of their employment

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
		• Three-month compulsory follow-up following critical incidents and personal and family crises conducted confidentially by mental health professionals of the member's choosing, with a standardised report back to the organisation as to suitability for continuing work. Being found unsuitable should be covered under workers comp insurance or special leave • All organisations should establish a risk-management database, with a staff member assessing each incident involving any serious threat of violence, conflict, injury, loss of life, missing person, or police drawing on and/or using any of their appointments This should contain weightings for children and women in particular types of incidents so as to build a threshold of which the member is required to have a pre-emptive comprehensive clinical evaluation, as suggested by the previous speaker • Need 'no-fault' WorkCover • National accreditation and licensing
Senate hearing: South Australia[154] 29/08/2018	• Increased workload, work intensity, no downtime between jobs, workload is unmanageable - compounded by chronic short-staffing and resources in the healthcare system, e.g., ramping, there can be space in A&E for patient to be dropped off, but no staff in hospital to take patient, so paramedics must stay with patient • When ramping occurs, paramedic may be at end of their shift, have to wait, so this is over-time or they may miss a meal break • Difficulties include first responders who are stressed as there are no ambulances available to be sent to priority 1 jobs as all caught on ramping • Rosters based on workforce planning models that are based on hours of labour utilisation rates. So, assumption is that the ambulance should be in working order 24/7. This is not possible given the paramedics need downtime between jobs to recover - need time away from the job • In creating flexibility for hospital workers, may impact negatively on flexibility for paramedics waiting on ramps	• Increased workload, work intensity, no downtime between jobs, workload is unmanageable - compounded by chronic short-staffing and resources in the healthcare system, e.g., ramping, there can be space in A&E for patient to be dropped off, but no staff in hospital to take patient, so paramedics must stay with patient • When ramping occurs, paramedic may be at end of their shift, have to wait, so this is over-time or they may miss a meal break • Difficulties include first responders who are stressed as there are no ambulances available to be sent to priority 1 jobs as all caught on ramping • Rosters based on workforce planning models that are based on hours of labour utilisation rates. So, assumption is that the ambulance should be in working order 24/7. This is not possible given the paramedics need downtime between jobs to recover - need time away from the job • In creating flexibility for hospital workers, may impact negatively on flexibility for paramedics waiting on ramps

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
	• No way of identifying cumulative stress • Some discussion on violence towards paramedics - paramedic uncertainty increased • High level of day-to-day work scrutinised and audited, high level of paper work • In cases that have to be investigated, organisation seeks to protect itself, rather than support worker • Country ambulance officers on duty for long hours • Difficulty navigating return-to-work, as a paramedic may be assigned to a team leader where no front-line duties, team leader is not familiar with context and not aware of the issues and may have little say over the steps in their recovery	• No way of identifying cumulative stress • Some discussion on violence towards paramedics - paramedic uncertainty increased • High level of day-to-day work scrutinised and audited, high level of paper work • In cases that have to be investigated, organisation seeks to protect itself, rather than support worker • Country ambulance officers on duty for long hours • Difficulty navigating return-to-work, as a paramedic may be assigned to a team leader where no front-line duties, team leader is not familiar with context and not aware of the issues and may have little say over the steps in their recovery
Senate hearing: Tasmania[154] 31/07/2018	• Rostering difficulties for smaller stations • Fatigue • Ambulance Tasmania are significantly under-resourced. Ambulance utilisation rates are high. Ambulance ramping is at record levels, and this adds to the pressure of fast-tracking recovery or pushing the next dispatch and corner-cutting, which can generally undermine any opportunity that an employee might have to debrief on a case • Isolation, removing them from the workplace, and putting in place non-meaningful duties can contribute to breaking the resilience of the individual, and further highlight to others not to call out the problem because the same thing will happen to them • Over-time burden, not enough staff to allocate enough annual leave, so people have massive leave credit issues at the time that they are breaking • Ambulance ramping has become normalised • In Tasmania, the volunteer workforce is two-thirds that of the paid salary workforce and is relied upon in rural and remote areas, but may lack experience and support. Rural paramedics are more prone to PTSD	• Processes in place to measure fatigue, but no robust structures in place to say, 'I can't do this anymore.' It is all up to the individual • Anecdotally, there are plenty of procedures, but nobody actually follows them • Specialist treatment not available in Tasmania; must go interstate to receive this treatment • Ambulance Tasmania has no effective general drug and alcohol policy • Identifying and help-seeking: a career-limiting or career-ending decision • Decisions by ambulance managers to protect workers from further harm can often be more harmful • Covert investigations or premature accusations are made, with negative outcomes (most organisations seek to catch someone rather than help someone) • EAP staff are ill-equipped and lack skills (e.g., given scripture from the Bible as a primary way of coping) • Recruiting volunteers is difficult

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
	• Sleep is a pervasive problem (30.7% of paramedics meet criteria for disturbed sleep compared with 5.4% for the general population)	• Need a screening process for volunteers and salaried staff. Recruits with military experience may already come with PTSD not being picking up • Need support programs that are confidential and anonymous, and no threat
Senate hearing: Victoria[154] 05/09/2018	• Confirms that impact of pressure on healthcare system and behaviour of middle managers a major stressor on paramedic stress – e.g., ramping - over and above attending trauma. Ramping as a problem of resource allocation causes paramedic stress • Shift work impact on mental health. Shift workers who are tired may be contravening Occ Health and Safety legislation, but little room to indicate this and be relieved of a shift - not the prevailing culture • Impact of resource shortages, staff shortages and New Public Management on mental health • AEA Victoria. Rate of suicide three times higher in Victoria than other emergency workers • Failure of insurance companies to pay out on OHS • Often performance management issues first sign of mental health problems or what triggers the mental health event – PTSD leads to non-performance issues which, in turn, put the paramedic under additional pressure – a cycle • Organisational audits by the service are stressful within emergency environment • Major problem for older male paramedics in job for 20 to 30 years cumulative PTSD • High-level management may have right policy, but it may not filter down to middle management – rosters, team leaders, HR, call centre, payroll • Stigma of admitting stress and anxiety • Unclear if counselling should be compulsory following traumatic event	• Lack of choice of employer is an issue for paramedics • Need for experienced counsellors who understand PTSD and the industry • Higher rates of suicide, suicide ideation, depression and anxiety, and relationship breakdown (being in a relationship is a protective factor against PTSD) • Danger of compulsory psychological assessment in that it is oriented towards finding a problem • Evidence on compulsory debriefing mixed • In some cases, psychiatrists are paid by the insurer to assess for the employer, so there is a conflict of interest in assessing PTSD – tension between being work-related or personality-related • Not enough psychiatrists available for paramedics with PTSD or with depression and anxiety • Psychiatrists needs to know the context in which the paramedic works

Submission	Causes of critical stress, chronic stress, and PTSD	What is missing / what's the problem?
	• Tension of following protocols on the one hand and dealing with situation at hand on the other • Refers to it as cumulative PTSD	
Senate hearing: Western Australia[154] 30/08/2018	• Culture of the organisation • Lack of confidentiality • Fear of revealing mental health problems in case taken off the job	• Problem where the service is a monopoly provider, paramedics have no other provider to seek employment with

Appendix 12: Grey literature (submissions) – Programs and resources

Submission	Existing Formal Programmes and Policies	Existing Informal Structures and Strategies
Senate Inquiry submission 9 Stephen Heydt, Healthy Minds Clinical Psychologists[96]	• Anti-violence campaigns for paramedic and ambulance officers have been launched in Victoria, South Australia, and Tasmania	
Senate Inquiry submission 14 Retired Ambulance Association of Victoria Incorporated[128]	• Collaboration between the RAAV and Ambulance Victoria has resulted in a 12 month pilot program, "Retired and Former Employee Peer Support Program" (RAFE Peer Support) to identify the extent of mental health and well-being concerns among former ambulance employees • The RAAV has appointed a Welfare Officer whose role is to coordinate the assessment of ongoing care and support of members and their families via an informal chat or visit, or recommendation to local government services, Red Cross, Salvation Army, and similar organisations	
Senate Inquiry submission 20 Peter James[98]	• Multi-service Critical Incident Stress Management process is in place; however, it is only activated when a supervisor or employee asks for help, and is fragmented between agencies	•
Senate Inquiry submission 25 Mr Malcolm Babb[95]	• WorkCover is one avenue used to address long-term mental health concerns, but not “friendly’ to those with mental health concerns. The process is seen as soul destroying • Priority One program which is a peer-based contact support group with some professional psychologist’s available, but the program is overwhelmed and not sustained	• Having to take annual and sick leave to address problems • Reliant on GPs and outside services for appropriate and timely support • Often easier to pay for treatment privately than get support through organisation • Informal support from colleagues viewed as essential
Senate Inquiry submission 34 Health Services Union, Tasmanian Branch[97]	• An inter-service Critical Incident Stress Management (CISM) process exists in which volunteers provide support to other agencies after crisis events. In Tasmania, this is provided by Police, Fire, Ambulance, and SES staff • The critical period for quick debriefing is immediately following an event, followed by other services such as Peer Support, ideally 2-48 hours post-event. Services provided beyond this timeframe are reported to be ineffective; however, needs do differ according to the individual and the nature of the event • Many EMS employers provide sleeping quarters for pre- and post-shift sleeping and for fatigue management napping during down times on shifts. However, the facilities provided, and fatigue management issues more generally differ across the sector	

Submission	Existing Formal Programmes and Policies	Existing Informal Structures and Strategies
Senate Inquiry submission 44 Australian Paramedics Association (NSW)[131]	• Acknowledgement of the need for education, promotion, and preventative measures • Implemented new mental health support and treatment services • Adequately qualified and familiar clinicians with first responders • Internal staff and managers facilitating service provision creates a lack of confidence • Peer support has been beneficial, but has not gained the confidence of paramedics due to appropriateness, inadequacy of training and recertification, the process of selecting and accessibility of peer support officers, and the motivation and intentions whether altruistic or career-motivated • Return-to-work programs are sporadic and not often roles which are meaningful – increase accessibility across other health fields to maintain meaningful work through rehabilitation • Questions and concerns around EAP programs due to confidentiality and discretion, timeliness, and availability of counselling sessions and the value of telephone counselling • Recent recruitment of chief psychologist and further plans to recruit clinical psychologists • Workers' compensation is available but demonstrated lack of case coordination and communication between parties, poor ongoing engagement, and limited provision of alternate work duties is a barrier to its use	
Senate Inquiry submission 51 The Council of Ambulance Authorities[132]	• Ambulance services have developed specific strategies for healthy workplaces, including mental health and well-being • Initiatives have ranged from instigating international conferences with a focus on mental health to joint symposiums with fellow members of the pre-hospital sector • CAA, the National Council of Ambulance Unions (NCAU), and Ambulance New Zealand (AMBNZ) are joint signatories to a landmark document committing to a 10-step Health and Well-being Strategy for a resilient workforce and healthy workplace • CAA is collaborating with universities across Australia and New Zealand to include mental health and well-being modules in paramedic courses • Collaboration with *Beyondblue* has enabled research into the mental health and well-being of emergency service personnel,	

Submission	Existing Formal Programmes and Policies	Existing Informal Structures and Strategies
	and the provision of strategies and programs to help combat mental health problems • Programs and services provided by ambulance services include: pre-employment screening, employing psychologists, chaplaincy, running peer support programs and on-going training in mental health support, buddy programs, peer support programs, retirement transition counselling, local community supports for LGBTI, Aboriginal staff support roles, healthy workplace programs, and ensuring staff are aware of organisational support programs • Legacy programs and Retired Officers Associations provide support, advice, and social connections pre- and/or post-retirement • All services have a dedicated mental health and well-being officer to support staff. However, the resources allocated to this aspect of employee welfare vary according to the resources available at each service	
Senate Inquiry submission 52 Ms Sally Jones[133]	• *Beyondblue* (2014) conducted an audit of mental health support programs in emergency services in Australia that looked at the type of support available and what programs are in place to help reduce the risk of suicide. It was identified that initiatives that help to build resilience and self-care are paramount to improving the mental health and well-being of workers (*Beyondblue*, 2014) • Ensure that support and programs are available and accessible to volunteer first responders. Quite often access to services can be restricted by geographical constraints • Ensure there are other services available to first responders in rural and remote regions such as phone or internet counselling services and access to online training courses • Implement a compulsory mental health literacy program for all employees • Leaders and all leadership programs be updated to reflect a mandatory component in how to undertake supportive conversations with employees • Exemplifies Queensland Ambulance Service (QAS) has a very successful staff support program called Priority One	• Supporting families of all first responders, emergency service workers, and volunteers. Support of loved ones has been proven to make a difference in being able to identify when someone is struggling • Initiatives to support retired workforce

Submission	Existing Formal Programmes and Policies	Existing Informal Structures and Strategies
	• Occupational health and safety (OHS) and disability discrimination legislation Human Rights 2010 Workers Mental Illness Practical Guide for Managers. Safe Work Australia (2014)	
Senate Inquiry submission 60 Adjunct Associate Professor Ray Bange[6]	• Victoria has taken a world-leading proactive approach in developing appropriate responses to change its organisational culture and enhance staff well-being • The toll of vicarious trauma can be significant and insidious, and direct access to the services of internal or contracted mental health professionals should be made available to all staff (including volunteers), their partners, and their immediate family • A national standard for paramedic services is proposed, together with the creation of a monitoring body • Among the important factors in the treatment of mental health and addiction, is the availability of universal services and pathways to ensure care becomes more accessible, more flexible, and more responsive at the earliest stage feasible, and which can be utilised by paramedics and other practitioners, rather than using emergency departments as the default care portal for all cases of illness and injury	
Senate Inquiry submission 66 Sirens of Silence[100]	• Sirens of Silence Charity Inc. is a community of support for all emergency service personnel • Support those who feel they are not receiving adequate assistance from their employers EAP and those who do not feel safe to contact their employer EAP • Creating a culture change to remove the social stigma that has long been associated within the emergency services • Including professional support plus crisis support, educational programs, and financial assistance	
Senate Inquiry submission 73 Australian Paramedics Association Queensland[139]	• NSW - appointment of a chief psychologist for the first time and the recruitment for five senior psychologists to provide 24-hour immediate support to paramedics in Sydney and regional areas, is significant organisational progress *Submission 73_Att03_Australian Paramedics Association Queensland* • Government response to urgent need for meeting with the health minister	*Submission 73_Att03_Australian Paramedics Association Queensland* • Governments and services not heeding calls from professional bodies and requests to outline the missing gaps and the extent of the issues *Submission73_Att05_Australian Paramedics Association Queensland*

Submission	Existing Formal Programmes and Policies	Existing Informal Structures and Strategies
	• Briefly acknowledged the concerns and then outlined the following existing responses: ▪ "Ongoing, dedicated support provided to all QAS employees through our Priority One service. Priority One is a significant evidence-based, multi-layered staff support service which offers counselling, chaplaincy, and peer support services, but also provides extensive psycho-educational and resilience building programs across the organisation' ▪ 'Externally validated reviews consistently demonstrate that the QAS has an effective and mature support system through the Priority One service' *Submission73_Att05_Australian Paramedics Association Queensland* • From the Commissioner in response to media report on paramedic mental health and illness - reiterating the Priority One Program • Reiterates that the QAS is committed to providing support and the necessary resources to maximise recovery or enhance well-being for anyone in QAS who is struggling with any issue	• Reiterating the use of alcohol and other drugs often used as a means of coping • Early recognition and access to help (placing the blame on the individual)
Senate Inquiry submission 74 Queensland Government[140]	• Queensland Government offers support to all workers and volunteers, linking them to services and evidenced-based programs and treatment • QFES model of mental health support includes, counselling, peer support, critical incident response, and leader-support consistent with best practice. Access to these services is promoted and equally available to all QFES members (paid, volunteer, and retired staff). The QFES counselling service is also extended to immediate family members • Pre-employment support through psycho-education and pre-employment testing, to employment with education, and a range of support services. The QAS provides assistance in the area of post-employment with transitional counselling pre- and post-employment	*Recommendations from review of Priority One* • That the existing services provided should be retained and progressively built upon in response to evolving and emergent issues and changing needs • That the internal and external services be retained while sustaining its close identity and connectivity with Operations • That staff are informed of Priority One staff support services and of the benefits that seeking help from such services is associated with • That the services provided continue to be widely promoted with an added emphasis on managers and supervisors, Emergency Medical Dispatchers, and family members • The research clearly demonstrates the importance of the role and the work carried out by Peer Support Officers and

Submission	Existing Formal Programmes and Policies	Existing Informal Structures and Strategies
	• The QAS has formalised leadership development programs, promoting current leadership practices, psychological incident management resources, and staff support strategies • The Office of Industrial Relations provides information on how psychological claims are managed within the workers' compensation scheme and the number of claims lodged by first responder agencies for mental health disorders. The Office of Industrial Relations is collaborating with external experts to independently benchmark against current best practice, and the ways in which the workers' compensation scheme can better support workers suffering from post-traumatic stress disorder (PTSD) and other mental health disorders • A multi-layered staff support program known as Priority One has been in place for more than twenty-five years • QAS staff are encouraged to access psychological support services proactively and early • Priority One provides support through a team of four internal multi-disciplinary mental health professionals and approximately sixty-five external psychologists • Resilience building and information pertaining to effectively coping and supporting others in relation to issues inside and outside of their working context is provided to all QAS operational employees, managers and supervisors, and peer support officers • Programs highlighted are the peer support, counselling, education and awareness, 'Finding the Silver Lining' Resilience Building Preparedness Program, Trauma and Resilience in the Workplace Training, and other education and training Workers' Compensation: • The Queensland workers' compensation scheme is a no fault, centrally-funded scheme that covers more than 158,000 employers and an estimated 2.3 million workers • Workers with a psychological or psychiatric injury can claim 'no fault' statutory compensation and access common law damages *if they can prove negligence on behalf of their employer*	highlights the importance of them having a sense of feeling valued and supported by Priority One and the organisation • Role of Peer Support Officers continues to be subject to rigorous audit by the Manager Staff Support Services through regular interviews, peer supervision, and monitoring of activity reports • A greater focus be made to select more Peer Support Officers from rural and remote areas, senior executives, and Communications Centres, providing they meet the selection requirements • A more responsive mechanism be introduced to ensure that Communication Centre staff gain ready access to supportive debriefing, defusing, peer support, and counselling services following critical incidents for them • All counsellors continue to be carefully and individually selected by the manager of Priority One to ensure appropriate skill levels and appropriateness for the organisational culture • The committee recognises the importance of Priority One continuing to provide a variety of access • The committee recognises the important responsibility that managers and supervisors have for identifying and supporting staff with psychological distress and supporting the well-being of staff • The committee thus recommends the continuation and development of training and ongoing regular support systems for managers and supervisors

Submission	Existing Formal Programmes and Policies	Existing Informal Structures and Strategies
	• The Workers' Compensation and Rehabilitation Act 2003 (the Act). *The Act states that 'an injury is a personal injury arising out of, or in the course of, employment if for a psychiatric or psychological disorder—the employment is the major significant contributing factor to the injury'.* The Act also excludes psychological injuries that relate to reasonable management action taken in a reasonable way by the employer • Significantly higher rejection rate of psychological/psychiatric claims than other injury types, with around two in three lodgements (63 per cent) not accepted for workers' compensation benefits. However, the proportion of psychological/psychiatric claims lodgement being accepted has increased in recent years (from 34.6 per cent in 2014-15, to 37.1 per cent in 2016-17) • The Office of Industrial Relations and WorkCover Queensland aim to reduce the impact and incidence of psychological injuries in the workplace through a range of initiatives to build industry capacity to identify and manage work-related psychosocial hazards. Current initiatives include the ongoing implementation of the Mental Health at Work Action Plan 2016-2020: ▪ The launch of the Mentally Healthy Workplaces Toolkit - the first integrated toolkit from an Australian regulator ▪ The appointment of Queensland's Mental Health Ambassador ▪ The facilitation of skills building workshops to assist managers, supervisors, and practitioners to identify and manage psychosocial hazards and risks ▪ The establishment of a Community of Practice to facilitate discussion between experts on common challenges, share resources and tools, and collaborate on joint projects ▪ The launch of a freely available, self-administered psychosocial risk assessment tool and implementation toolkit (People at Work)	

Submission	Existing Formal Programmes and Policies	Existing Informal Structures and Strategies
	▪ Delivery of information and guidance via webinars, conferences, forums, website, case studies, and social media • Office of Industrial Relations is establishing an independent service for workers suffering from a psychological condition to assist them in accessing available community support as they move through the workers' compensation system • The QAS has a well-embedded and integrated Staff Support Unit that is specifically dedicated to psychological well-being that reports directly, but without disclosing confidential information, to the QAS Commissioner *Submission 74_Att01_Queensland Government: A multi-method evaluation and examination of QAS Staff Support Services Priority One* • Internal and external stakeholders in conducting a wide-ranging review enabling a high level of scrutiny of Queensland Ambulance Service (QAS) Staff Support Services (Priority One) • Services provided by Staff Support Program are valued and well utilised • Vital in promoting and maintaining the mental health of employees • Those who had accessed the services had significantly higher levels of satisfaction and resilience than those who had not. Encouragingly, it was found that satisfaction with the Priority One Program services was significantly related to the presence of well-being and lower levels of burnout	
Senate Inquiry submission 77 Ambulance Employees Australia Victoria[142]	• 'Mental Health and Well-being Strategy 2016-19', as well as a good practice framework document, and the rollout of a $1.2 million organisation-wide mental health training initiative for Ambulance Victoria employees • A 'Psychological Health and Well-being Consultative Group' was also created to oversee and recommend initiatives and promote improved communication and collaboration	

Submission	Existing Formal Programmes and Policies	Existing Informal Structures and Strategies
	• As of June 2018, these mechanisms are as follows: 24-hour telephone counselling and crisis support service chaplaincy program, confidential and free counselling (through the Victorian Ambulance Counselling Unit), e-Learning packages, face-to-face workshops, Peer Support Program, and SMART (Stress Management and Resilience Tools) Program Areas for improvement: • Peer support program is seen by many as lacking coordination, gender, and age diversity, and has a region-specific focus • More work needs to be done to ensure those absent from work due to mental illness remain connected with their peers, colleagues, and workplaces	
Senate Inquiry submission 78 Victorian Government[143]	• Victorian Government investments to promote and protect the mental health of first responders include: ▪ $1.3 million through the Victorian Budget 2018/19 to develop a mental health and well-being dedicated phone app to support emergency service personnel and volunteers improve health and well-being outcomes ▪ $2.7 million in 2016/17 through the Ambulance Response Time Rescue Fund towards initiatives to support paramedic health and well-being, including $1.0 million to support AV to provide a mental health awareness training program, delivered by *Beyondblue* ▪ $1.3 million through the Victorian Budget 2015/16 to support AV to double the number of peer support coordinators and improve access to support services ▪ AV *Mental Health and Well-being Strategy 2016-19* has a person-centred approach to minimise, if not eliminate, cases of work-related suicide and suicide attempts, and ensure mental illness is effectively managed across all staff • *WorkSafe* has recently embarked on '*WorkSafe 2030'*, a new long-term strategy which aims to create safer and healthier workplaces	

Submission	Existing Formal Programmes and Policies	Existing Informal Structures and Strategies
	• *WorkSafe*, in partnership with the Victorian Department of Health and Human Services (DHHS), launched the five-year, $50 million, *WorkWell* program on 11 April 2017 • Ambulance service – pre-screening, initial education, and ongoing education, training, and transition assistance • Access for all staff to psychology and counselling support, peer support, pastoral care, resilience sessions, and ongoing welfare support by managers • Clinical governance is an important aspect of delivery of services. AV manages quality control over contracted psychologists through the following means and measures: ▪ All VACU psychologists are Australian Health Practitioner Regulation Agency registered ▪ Interviews and reference checks are conducted with all psychologists who apply to join the AV VACU network to ensure relevance of experience and knowledge ▪ Annual self-audit and random audits are conducted ▪ Feedback and complaints mechanisms, which are followed up and actioned	
Senate Inquiry submission 79 National Council of Ambulance Unions[144]	• 2016, *Beyondblue* launched a comprehensive framework for mental health and well-being in first responder agencies • NCAU/CAA Joint Health and Well-being Strategy • Reporting of mental health conditions: ▪ Under-reporting due to stigma and cultural norms in a traditionally male-dominated organisation • Specialised occupational mental health support and treatment services: ▪ Time to find and access medical and mental health support services that cater for the often unique needs of emergency workers ▪ The NCAU agrees with the RANZCP's submission that medical professionals need to aware of the unique	

Submission	Existing Formal Programmes and Policies	Existing Informal Structures and Strategies
	contributing factors, circumstances, and presentations of emergency workers and first responders generally, and paramedics specifically ▪ Highlighted the need for a “First Responders Care Network” • Workers' compensation: ▪ Expected to make decisions around treatment, fill in complex claim forms and WHS notifications, many of which have strict timeframes for completion under legislation ▪ Perceived or actual organisational conflicts of interest between employers and insurers seeking to limit claims exposure and premiums versus the needs of the injured worker; that they are frequently asked to supply the same information repeatedly, reliving traumatic events, in interviews that are often confrontational and aggressive • Workplace culture and management practices: ▪ Pivotal importance - workplace culture and management practices in dealing successfully with mental health and well-being of paramedics • Occupational function and return-to-work arrangements: ▪ The lack of meaningful alternate duties and return-to-work options for paramedics who have suffered a mental health issue or psychological injury are a constant source of frustration • Collaboration between first responder and emergency services organisations: • Post-retirement mental health support services • Resource allocation ▪ One of the biggest factors impacting on paramedic mental health and well-being are the ever-increasing demands on the need for ambulance services. Ambulance services nationally are struggling to meet workloads. The NCAU believes that a demand-based funding model would help	

Submission	Existing Formal Programmes and Policies	Existing Informal Structures and Strategies
	address the traditional boom and bust cycle of paramedic recruitment	
Senate Inquiry submission 86 United Voice, The Ambulance Union of WA[146]	• United Voice WA has been working with the state's ambulance services provider St John and the state government to advocate for significant improvements to organisational health and well-being strategies, workplace culture, and government oversight • The results of an independent review commissioned by St John of their workplace culture and staff and volunteer well-being concluded that the cumulative impact of exposure to trauma has the potential to impact mental health. Further to this, it was suggested that St John's anticipation and management of this risk factors could be improved • "It is troubling that St John remains reluctant to accept the direct causal connection between the daily tasks of frontline officers and an individual's psychological well-being" • Recommendation: Formal recognition from all governments that frontline Emergency Service Workers can suffer adverse psychological effects from trauma experienced at work	
Senate Inquiry submission 101 St John Ambulance WA[151] (including report and literature review prepared by Expert Advisory Group)	Mental health and well-being research: • Staff and volunteers participated in a study conducted by *Beyondblue* measuring well-being and mental health within Australian first responder organisations, and collaboration with Curtin University is planned to explore resilience and mental health among student Ambulance Officers • The 2016 workforce culture survey included questions about well-being and support which are intended for inclusion in future surveys Mental health and well-being support: • A Well-being and Support Team, overseen by a clinical psychologist and consisting of other staff with psychological, health, and theology qualifications, provide support following critical incidents, offer formal and informal assistance at a well-being drop-in space, facilitate mediation, provide referrals to	

Submission	Existing Formal Programmes and Policies	Existing Informal Structures and Strategies
	external clinical professionals, provide education and provide support on the road and in hospital • Other well-being strategies include the provision of $500 annually per staff member to spend on their well-being (e.g., gym membership, yoga classes, etc.), a drug and alcohol program, and a safety strategy • Employees, volunteers, and their families are entitled to 6 confidential sessions with a mental health professional external to the organisation. Additional sessions are available to staff and volunteers if needed • When a critical incident occurs in metropolitan areas, operations management complete welfare checks with the on-road staff, who are then contacted by the Well-being Support Team if requested by either the staff members or their line supervisor. In country areas, the Well-being Support Team are notified directly. All Well-being and Support follow-up requests are completed within 72 hours, and flagging of potentially traumatic events occurs 24 hours a day • St John Ambulance WA employs a whole-of-service approach to peer support. Staff and volunteers are encouraged to look out for each other and to continue their education about mental health and how to help others. It was recommended by an Expert Advisory Group that the peer support approach continue and extend to include an evaluation process • Employees, volunteers, and their families are informed of available support via a publically available website, the organisation's Intranet, telephone contact, brochures, staff I-Pads, country visits, on-road attendance, Employee Engagement Program meetings, leadership training, the Continuing Education Program, and the compulsory Well-being and Support induction for new employees • Third Space, an online program to assist in the creation of work/life balance focusing on the transition from work-to-home is being considered • Consultation is in process for the development of an evidence-based mental health screening app for staff and volunteers to	

Submission	Existing Formal Programmes and Policies	Existing Informal Structures and Strategies
	download onto their personal mobile devices to ensure confidentiality • More extensive mental health screening will be introduced in 2018 as part of the recruitment of country volunteers • The provision of additional support for the country leadership group is being considered due to the isolated and distinctive nature of their work Mental health and well-being education/training: • Well-being education content has been updated to ensure it is aligned with best practice. Future content will be strengths-based and draw on the benefits of resilience, effective coping strategies, and peer support. All education documents are accompanied by research to support the topic • Staff have the opportunity to receive 1-1 face-to-face support for 2 days for everyone, every year, for the life of their career. During the face-to-face time, 2 hours is dedicated to psycho-education • Student Ambulance Officers will now undertake resilience training • Potentially Traumatic Event Response Meeting training provides guidance on the management of disasters and potentially traumatic incidents. This will be delivered to all operational leadership staff in 2018 • All St John employees and volunteers have been offered the opportunity to participate in the organisation's First Aid for Mental Health workshops • Family nights are held for new Ambulance Officers' families, the content of which has been updated based on feedback. These events will be extended to include patient transport and SOC new recruits, with additional education content planned for families in the future • A well-being education component is included in the training completed by paramedics prior to country deployment, including personal and professional challenges, supporting volunteers and mental health and well-being management skills. Additional	

Submission	Existing Formal Programmes and Policies	Existing Informal Structures and Strategies
	support has been implemented to ensure that community paramedics have the skills to identify and act when volunteers are experiencing distress • All managers had completed stress management and resilience workshops, and they will attend the organisation's First Aid for mental health workshop and suicide prevention training • All new and existing managers are required to complete training on managing performance, conflict and conduct, providing and receiving feedback, and being a coach. A refresher program will be developed	
Senate Inquiry submission 115 United Voice, Industrial Union of Employees, Queensland[153] (including a summary report prepared by Griffith University for United Voice Queensland, the Ambulance Employees' Association of South Australia, and United Voice Northern Territory)	• United Voice works closely with the Queensland Ambulance Service to resolve a variety of significant workplace issues relating to employee well-being. Examples include participation in workplace forums and consulting on employee support systems • In 2015, United Voice commissioned Griffith University to conduct a research study into the improvement of people management in emergency services • Queensland Ambulance Service conducts a one day mandatory training program for managers, supervisors, and acting supervisors which focuses on Trauma and Resilience in the Workplace. The program covers legal responsibility for psychological well-being, and other topics such as critical incidents, PTSD, anxiety, depression, and suicide • Support services provided in South Australia and Queensland include telephone and face-to-face counselling services, debriefing, education and training, and peer support programs. Responses from interviewees indicated an overall positive perception of the support programs • Induction programs: ▪ SA Ambulance Service provides a half-day induction program with all new employees covering shift work, resilience, stress management, acute stress, cumulative stress, and the peer support program ▪ Queensland Ambulance Service provides a four and a half hour program in which participants are provided with online and print resources and material to complete over the first 12-24 weeks on the road, and a reflective journal. Topics include sleep patterns, work/life balance, coping mechanisms, how to recognise stressors and reactions to	• Returning to base for meal breaks assists paramedics to de-stress, reduces fatigue, and allows them to consume healthier food than they would on the road • Many paramedics indicated that colleagues, family, and friends are their main and often only support available • Low social support was associated with an increased intention to leave the profession • Social support of colleagues, friends, family, and the immediate manager was found to have a negative relationship to the frequency with which individuals experience PTSD symptoms

Submission	Existing Formal Programmes and Policies	Existing Informal Structures and Strategies
	the stress. This is followed by a mandatory appointment with the organisation's psychologist	
Senate hearing: Australian Capital Territory[154] 7/11/2018	• Peer support • Pastoral care • Therapy dog introduced into control centre • Fitness Passport – Recognising the link between fitness, mental health, and psychological resilience. The passport allows our staff and their families to access hundreds of gyms and swimming centres across the state at reduced membership rates. To date, about a third of staff and their families have signed up (of NSW services) • Supporting our families program (since March 2017) to help paramedics' families to more fully understand what it is that the paramedic job entails, how they can recognise signs of stress or mental illness in their loved one, and what they can do to assist them to get well, stay healthy, and get appropriate help	• Buddy system for new recruits or experienced staff who have moved to a new work area
Senate hearing: South Australia[154] 29/08/2018	• Need focus on primary prevention of mental illness, strategies put in place to prevent anxiety and depression • Committee asks if there should be an audit of traumatic cases a paramedic allowed to attend in any single time period • Ramping is stressful, but not the sole cause of paramedic stress • Employee assistance program • Trained peer support persons • Edith Cowan university suggests centralised organisation or research centre that collates project in a synchronised way and then coordinated response to workplace stress, compensation, programs of support, and organisational responses • Suggests development of online tool kit for managing and recognising stress, anxiety, depression, and PTSD • Suggests need for modules in education university programs • Suggests need for revision of paramedic competencies	• Opportunity for paramedics to move back from front-line job without loss of status, money, or promotion • Ambiguity around proposals for psychological testing, mandatory counselling - argument is that research not available that proves efficacy • Total set of resources should be available for retired paramedics that are available for employed paramedics in terms of mental well-being

Submission	Existing Formal Programmes and Policies	Existing Informal Structures and Strategies
Senate hearing: Queensland[154] 18/07/2018	• The Priority One program: a network of 124 currently active peer support officers; approx. 300 interactions each month, with likely many more informal interactions which are not being reported	• Poor at mitigating the consequences of shift work: suggest daylight and good exercise, eat healthy food; but often resort to Melatonin, Stilnox, or Temazepam
Senate hearing: Tasmania[154] 31/07/2018	• Full support from senior leadership and endorsement of the 10-step CAA mental health and well-being strategy from the 10 chief executives, which is also fully endorsed by the ambulance sector unions • Peer support - a pure box-ticking exercise • ACT example to address ambulance ramping: after 30 minutes, they handover and leave	• Self-medication • Many colleagues who have suicided • improving our supervision and leadership and our support for our staff in the field to move away from single-person dependencies that trouble the ambulance service
Senate hearing: Victoria[154] 05/09/2018	• Return-to-work paramedics need experienced paramedics to work with initially, not graduates or juniors • Ambulance Victoria has return-to-work coordinators who assist paramedics returning to work • Presumptive model required for OHS cases and insurance claims • Services could have network or list of available and experienced psychologists and psychiatrists for referral, rather than let paramedics have to go to their GP and hope GP can find someone experienced and available • Recommend organisations having a care pathway with professional counsellors to deal with PTSD issues	
Senate hearing: Western Australia[154] 30/08/2018		• Undecided on the value of mandatory CI counselling given the lack of evidence to support it

Appendix 13: Grey literature (submissions) - Legislation, policies, retirement, and financial stability

Submission	Legislation, industrial agreements, or changes to policy to manage workplace stress	Retirement, superannuation & financial stability
Senate Inquiry submission 14 Retired Ambulance Association of Victoria Incorporated[128]		Recommendations: • A broad-based financial system to ensure all retired first responders do not need to have "Out of pocket expenses" in accessing mental health or other related services • A better understanding of the onset of mental health conditions and early recognition and support to be available on 24-hour basis • Better contact with, and between, members who may have had mental health issues or may seem to be in a position to acquire mental health problems • All members to be made aware of the need to support any member who may show signs of mental health problems and guide them towards gaining assistance from Peer Support or psychiatric services • There is a need to ensure that all members and their families have the ability to remain in contact with the RAAV and not become socially isolated, particularly those who are unwell and/or in nursing care either at home or in an ongoing nursing facility
Senate Inquiry submission 86 United Voice – The Ambulance Union of WA[146]	The connection between serving as a first responder and experiencing PTSD should be reflected in presumptive legislation. The aims of this includes: • Reducing stigma around mental illness • Simplifying the causal relationship between PTSD and an individual's employment • Increasing the confidence of first responders to seek help and lead to cultural change in first responder organisations • Validating that PTSD is a workplace injury faced by emergency service personnel • Facilitating timely access to compensation and treatment • Revering the onus on first responders to prove that their employment is a significant cause of PTSD • Mitigating the requirement for first responders to identify a single traumatic incident as the cause of PTSD • Reducing the emotional and financial burden experienced by first responders during the worker's compensation claim and settlement process	

Submission	Legislation, industrial agreements, or changes to policy to manage workplace stress	Retirement, superannuation & financial stability
	• The legislation should not hinder compensation for mental health conditions other than PTSD, nor assume that every mental health condition developed, or exacerbated, through work as a first responder is PTSD • Presumptive legislation has been established internationally for first responders diagnosed with PTSD. For example, six Canadian provinces have passed legislation that presumes a causal link between psychological disorders and workplace trauma • Recommendation: that the Commonwealth government work with state governments to introduce uniform presumptive workers' compensation laws that benefit ambulance officers who develop PTSD as a result of performing their duties	
Senate Inquiry submission 101 St John Ambulance WA[151] (including report and literature review prepared by Expert Advisory Group)	Expert Advisory Group: • An Expert Advisory Group was appointed by St John Ambulance WA upon recommendation by an Independent Oversight Panel to assist in the development of a formal position on the current and ongoing mental health-related needs of the ambulance workforce • All members have experienced working with emergency service workers, people experiencing PTSD, and/or emergency service organisations • Members met with the Well-being and Support Team, emergency medical dispatchers, and members of the board and executive. The state operations centre, education facilities, and head office were also inspected. Current policies, organisational documents, and presentations were also accessed along with previous reports presented to St John Ambulance WA Industry Collaboration: • A Memorandum of Understanding was signed between St John Ambulance WA and United Voice in 2017 • St John Ambulance WA collaborates with CAA members and attends CAA and local first responder meetings to enhance its well-being and support services. CAA's health and well-being strategy as best practice frameworks to ensure the Well-being and Support Strategy is aligned with industry expectations	• Career management and transition pathways are standing agenda items for the Employee Engagement Program meetings, with a sub-group formed to examine these topics

Submission	Legislation, industrial agreements, or changes to policy to manage workplace stress	Retirement, superannuation & financial stability
	Policies: • The CEO's responsibility for the psychological health (as a result of critical trauma) of St John Ambulance WA employees and volunteers as it relates to the work environment was formally included in the CEO performance agreement in 2016 • A Code of Conduct was developed in consultation with a clinical psychologist to combine management policies pertaining to misconduct, performance improvement, and conflict resolution • The Director-General of Health has stated an intention to consider the recommendation that the WA state government consider a formal coordination of well-being support provision for emergency service personnel • Education is planned around communication commitments and strategies, code of conduct, the leadership capability framework, customer service standards, and safety guidelines • St John Ambulance WA's legal framework relating to health and well-being was reviewed in 2017. All safety documentation was reviewed and updated to include both physical and psychological risks. The risk management process will be streamlined and a safety platform for hazards, a risk register, and auditing tools introduced • The People and Culture directorate prepares a summary report each month reporting on psychological health and safety for the Board • St John Ambulance WA is developing an actuarial model for areas of identified need such as future demand analysis and workforce segmentation Employee engagement: • Employee Engagement program consists of 26 members from all sections of the St John Ambulance WA workforce • The program's planning was influenced by the results from St John Ambulance WA's staff satisfaction and workforce culture survey delivered by Macquarie University	

Submission	Legislation, industrial agreements, or changes to policy to manage workplace stress	Retirement, superannuation & financial stability
	• Well-being and support is a standing agenda item at program meetings	
Senate Inquiry submission 111 Ambulance Employees'[152] Association of South Australia	Following an industrial dispute over resource shortages, the AEASA is having 'strategic' discussions with the SA Ambulance Service and the SA Health Department to develop a new service delivery model (SDM) that incorporates factors critical to first-responder well-being	
Submission 115 United Voice, Industrial Union of Employees, Queensland[153] (including a summary report prepared by Griffith University for United Voice Queensland, the Ambulance Employees' Association of South Australia, and United Voice Northern Territory)	• Code One is a multi-layered strategy developed by United Voice that aims to improve the working conditions of ambulance officers by: ▪ Eliminating the privatisation of patient transfer and communications services in the ambulance service ▪ Increasing the service by 600 ambulances over three years ▪ Fixing the 'ambulance fatigue crisis', improving rostering practices ▪ Increasing opportunities for skills maintenance and development ▪ Introducing professional registration and professional pay rates and superannuation payable on total earnings ▪ Introducing a medical discharge pension ▪ Reinstating collective rights ▪ Developing and improving technology ▪ Improving stakeholder engagement ▪ Ensuring ambulance officers mental and physical health and well-being is properly managed • Staff appreciated the option to use the union, but did not require their involvement in all issues, sometimes wishing to speak with their managers directly • In the Northern Territory, following union negotiation, if paramedics cannot take a meal break after four hours, they receive pay at double-time until they are able to return to their station to take a	

Submission	Legislation, industrial agreements, or changes to policy to manage workplace stress	Retirement, superannuation & financial stability
	break. Although the additional compensation is welcome, it does not address the fundamental matter of the associated physiological effects of delayed meals and rest • Management culture is an important aspect of staff well-being	
Senate hearing: Australian Capital Territory[154] 07/11/2018	• Presumptive legislation suggested for OHS cases • Notes that current system can result in workers who have a physical injury developing a psychological one as a result of the process • Suggests training of retired personnel to assist with peer support • Psychological first aid	• Mentions need for paramedics who are going to retire to prevent them just dropping off the radar, no longer provided with support
Senate hearing: Queensland[154] 18/07/2018	• Since 2013, the QAS has required every new frontline staff member to undertake a post-traumatic growth and resilience program (Finding the Silver Lining) • Since 2009, all QAS managers and supervisors have been required to complete an education program (Trauma and Resilience in the Workplace) • QAS have engaged more than 500 extra frontline staff over the past five years to respond to increasing demand	
Senate hearing: Victoria[154] 05/09/2018		• Mentions transition to retirement
Senate hearing: Western Australia[154] 30/08/2018	• Presumptive compensation legislation • Universal workers' compensation across all Australian states and territories lead by Federal government • Where states contract out emergency services, the state must still take responsibility for workers' mental health • Government need to make clear their position that being a first responder, inherently exposes workers to increased trauma and at risk of mental illness, depression, stress, and PTSD • Need from all levels of government that paramedics can suffer from adverse psychological effects of work-related trauma	

Submission	Legislation, industrial agreements, or changes to policy to manage workplace stress	Retirement, superannuation & financial stability
	• Contracted out paramedic services lack legislation governing them as an essential service • Contracted paramedic services need to be subject to government imposed KPIs and to strong government oversight • Recommend trauma tracking • Resilience training • Access to counselling services outside of the organisation • Yearly budgets to access own counselling care • In-house mental health support team go on road every week to work alongside paramedics on the road • Provision of mental health up to 10 sessions per year • Provision of funds to maintain own mental health, and recommended to use it, even if feeling well • Recommend first responder agencies work together in each state	

Appendix 14: Grey literature - Ambulance service annual reports

	Population and workload	Mental Health Specific	KPIs Dispatch / Workload Data	Policy and other supporting program developments
New South Wales Ambulance Service[104]	• 7.5 million people in NSW, distributed across an area of 801,600 square kilometres • 1.2 million calls for ambulance • 1,056,743 emergency responses in 2018 • Continued to expand and implement integrated care initiatives to provide patients with appropriate care options and reduce the number of transports to Emergency Departments (EDs). These include patient referral to alternate destinations, palliative and end-of-life care, aged care, and paramedic connect and frequent user management • Programs focus on improving integration and patient connectedness, through both new and already established models of care, with local health districts, social service providers, Primary Healthcare Networks (PHNs), and non-government organisations within, and across, local health district boundaries • Falls Strategy, NSW Ambulance Authorised Care Plans, and NSW Ambulance Patient Focused Disability Inclusion Plan	• Provides confidential counselling for employees, volunteers, and their families • Contracted provider of the Employee Assistance Program provides confidential trauma support counselling 24/7 on a range of personal and work issues • Staff also have access to Peer Support Officers, Chaplains, and Grievance Contact Officers throughout the state • Chaplains are available to provide confidential and individual spiritual counselling, pastoral care, and assistance to employees, patients, and their families following a traumatic incident, 24 hours a day, 7 days a week • Grievance Contact Officers are staff who voluntarily assist their colleagues in times of need by: providing confidential advice to staff seeking information on workplace grievances; including concerns about potential bullying and harassment; assisting parties involved in the grievance to generate options to resolve their grievance • Well-being Investment Program to further support staff mental health and well-being		• Development of healthy workplace strategies designed to improve the workplace environment, promote early resolution of workplace conflict at a local level, help staff members resolve workplace issues, and to simplify policies and procedures for managing workplace concerns • Respectful workplace training for all staff in use of the Straight Talk tool; new simplified standard operating procedures for raising workplace concerns and preventing and managing workplace bullying; continuing workshops, forums, and surveys to discuss and promote organisational values • An enhanced staff induction program which includes respectful workplace training • Additional skills and training for frontline managers through the Ambulance Management Qualification, including the implementation and application of healthy workplace strategies and management accountabilities in all managers' annual appraisals

	Population and workload	Mental Health Specific	KPIs Dispatch / Workload Data	Policy and other supporting program developments
		• Supported by $30 million in NSW Government funding over four years • Developed with substantial input from stakeholders, including unions, and followed an overwhelming response to the 2016 NSW Ambulance Well-being and Resilience Summit • Four streams are being implemented as part of the program: Well at Work; Safe at Work; Protected at Work; and Capable Leader • Recognising the need and referring colleagues who may benefit from professional assistance; and arranging professional support from the Employee Assistance Program provider • The Well-being Investment Program also features a set of major initiatives to strengthen support for staff, including the appointment of the first chief psychologist, two occupational violence prevention officers, and new occupational therapist, physiotherapist, and exercise physiotherapist positions • The program is also delivering an increase in numbers of peer support officers and chaplains		
St. John Ambulance Northern	• 51,970 '000' calls received	No information provided.		

	Population and workload	Mental Health Specific	KPIs Dispatch / Workload Data	Policy and other supporting program developments
Territory (2017 AR – 2018 not available)[101]	•Ambulances attended to 52,581 cases •38,255 patients transported •535 volunteers dedicated 41,786 hours •Public Education Training issues 17,685 certificates			
Queensland Ambulance Service[103]	•QAS forms an integral part of the primary healthcare sector in Queensland •A statewide service accountable for the delivery of pre-hospital ambulance response services, emergency, and non-emergency pre-hospital patient care and transport services, inter-facility ambulance transport, casualty room services, and planning and coordination of multi-casualty incidents and disasters •QAS delivers ambulance services from 295 response locations through 15 Local Ambulance Service Networks (LASNs) •Additional statewide LASN comprising of eight operations centres distributed throughout Queensland that manage emergency call-taking and operational logistics •Cardio Pulmonary Resuscitation (CPR) Awareness Program to 14,790 people across Queensland	•Mental Health and Resilience training was delivered to 51 new QAS frontline officers and includes graduate paramedics and emergency medical dispatchers. Mental health training was delivered to a further 27 QAS managers and supervisors •Mental Health and Alcohol and Other Drug Services – 9.3 per cent of budget •3.9 per cent funded by Suicide Prevention Health Taskforce •QAS partnered with the Queensland Forensic Mental Health Service and the Queensland Police Service (QPS) on the Partners in Prevention: Understanding and Enhancing First Responses to Suicide Crisis Situations •Trained an additional 51 Peer Support Officers and provided refresher training to 93 current Peer Support Officers through central and localised training courses •This includes additional specific training provided to eight Lesbian,		• Liaison with health executives to ensure the QAS is provided with, and is aware of, all possible opportunities for alternative care pathways for suitable patients • The continued utilisation of the QAS Local-area Assessment and Referral Unit (LARU) to assist with Emergency Department (ED) avoidance in line with alternative pathways • To strengthen the coordination of non-urgent transfers to lessen the overflow of non-acute incidents onto acute ambulances, maximising the availability of emergency ambulance resources during heavy demand • The Queensland Parliament passed the Health Practitioner Regulation National Law and Other Legislation Amendment Act 2017 on 6 September 2017. This legislative change facilitates the establishment of the Paramedicine Board of Australia, and permits the entry of paramedics into the National Registration and Accreditation Scheme for Health Professions

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	• Deliver first aid and associated courses with 1,550 courses being delivered and a total of 11,168 people attending deployment, dispatch, and coordination of non-urgent patient transport services • Employed an additional 127.75 ambulance officers as part of the demand management strategy and to provide enhanced roster coverage • Non-emergency patient transport (NEPT) requests system that will integrate with CAD (medical dispatch and data capture) system • Investigate the viability of a referral pathway to 13HEALTH for suitable calls presenting to QAS Operations Centres • Demand for QAS services continues to escalate, with a percentage of this demand driven by calls • Improved patient access to additional referral pathways into primary and secondary healthcare	Gay, Bisexual, Transgender, Queer and Intersex (LGBTQI) Peer Support Officers from across the state to advance inclusion across QAS • QAS contributed to the Queensland Health Suicide Prevention Taskforce to provide information on the emergency response to suicide, and collaborate to develop appropriate prevention strategies and deliver effective care • QAS has continued to foster strategic partnerships with the Queensland Forensic Mental Health Service (QFMHS), and police through the project: Partners in Prevention: Understanding and Enhancing First Responses to Suicide Crisis Situations project • QAS finalised the implementation of all recommendations of the Paramedic Safety Taskforce in December 2016 • In 2017-2018, the QAS established a QAS Fitness for Duty Working Group, to drive the development and ongoing implementation of a Fitness for Duty Framework to protect the safety of QAS employees, patients, and others		• Collaborated with the Australian Commission on Safety and Quality in Healthcare to ensure interoperability with the QAS's electronic Ambulance Report Form (eARF) in respect of the My Health Record rollout • Completed the Acute Behavioural Disturbance (ABD) Audit and identified that patients presenting with ABD who were treated with droperidol (compared to midazolam) had statistically significant reductions in adverse event rates, time to sedation, and (pre-hospital and hospital) additional sedation requirements • An increased rate of successful sedation was also noted • Collaborated with the QAS to establish Patient Access and Co-ordinations Hubs (PACH) to strengthen the capacity of the health system to meet emergency care requirements • QAS Diversity and Inclusion Strategy 2017–2022 that provides commitment and intent to improve workforce diversity and the cultural capability of the workforce • QAS developed the Patient Access Coordination Hub (PACH) dashboard application • Delivered face-to-face training to managers and supervisors across the state about domestic and family

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				violence, with a focus on responding to, and supporting, employees affected by domestic and family violence and understanding the impact of domestic and family violence in the workplace
SA Ambulance Service[101]	• The total number of SAAS ambulance stations has increased to 22 in the metropolitan area (not including the new SAAS Rescue, Retrieval and Aviation Services Base at Adelaide Airport) • 217,787 calls (6.7% increase from last year) • Transported 248,720 patients (2.22% increase from last year, and treated but did not transport a further 23,505 patients (4.7% decrease from last year) • MedSTAR performed 2,644 patient retrieval missions, retrieving 2,160 patients • 1,289 volunteers responded to approximately 20,167 cases across the state	Program 4: Fitness for Worker Health and Well-being: • An Employee Assistance Program and Peer Support program is readily available to staff and deployed by SAAS where necessary to ensure immediate support is provided. 2,608 calls were made to Peer Support Officers in 2017/18 • Well-being programs available to all staff that include access to in-house exercise physiologist who can undertake an assessment, advise of activities, and encourage and support staff to achieve their goals. Exercise physiologist can also provide support to injured workers pre and post their return to work. Activation by return-to-work consultant • Workfit Services Consultant and Work Health and Safety services available to assist staff as required		• During 2017/18, the SAAS undertook a significant project to develop a Fatigue Self-Assessment Tool (FSAT) that provides SAAS staff with a series of straight forward questions to help them determine if they feel fit for duty Program 1: Governance and Accountability. Due diligence is exercised appropriately and communication and consultation pathways are established and maintained: • Defined Officers identified and trained. The Defined Officer Register is established and maintained quarterly • A Governance Committee is established to oversee and monitor Work Health Safety and Injury Management (WHSIM) programs, actively monitor data trends, and assist in the development of risk mitigation strategies • The Due Diligence Report is provided quarterly to the Governance Committee • The Work Health Safety Group is established as an enabler for communication and consultation

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				between management and operations on WHSIM issues • The Work Health Safety Zone forums are established for the management and review of local Work Health Safety and Injury Management performance and risk Program 2: Hazard and Risk Management: Hazards are identified and managed in accordance with the hierarchy of control, strategies for high priority hazards are established and maintained: • Hazards are managed in accordance with the SA Health Hazard Identification and Risk Management Policy Directive • Strategies for high priority hazards and risk are managed in accordance with the SA Health Risk Management Framework • Risks rated as High are registered on the Organisational Risk Register and monitored and reviewed as scheduled Program 3: Incident Reporting and Investigation: Early Reporting and notification systems for hazards, incidents and near misses, incident investigation and corrective action occurs to prevent recurrence: • An Incident Report and Quick Assessment (IRQA) process is implemented across the SAAS to

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				enable early reporting and investigation of incidents • All incidents and corrective actions identified are recorded on the IRQA database and monitored for trends and progress • All incidents and hazards reported are risk rated as part of the investigation process • Incidents or hazards rated as medium or above activate management escalation as part of the investigation process • A hazard reporting process is implemented enabling early reporting, investigation, and control of identified hazards • All prevention strategies utilise the hierarchy of control to mitigate risk • Risks or hazards rated high or above that cannot be mitigated immediately require short-, medium-, and long-term strategies to reduce the risk and are recorded on the Organisational Risk Register until full controls can be implemented Program 5: Injury Management – systems and processes implemented to support injured workers to return to work: • An Injury Management team is established within the SAAS with equitable claims and return-to-work programs implemented to assist and support line managers and injured

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				workers following a work-related injury/illness
Ambulance Victoria[102]	• Six million over 227,000 square kilometres • AV responded to 854,603 emergency and non-emergency cases during the year • In the metropolitan regions, 127,679 non-emergency stretcher patients were transported, 18,269 patients more than the previous year, and 81,648 patients not in need of clinical care or monitoring en route were transported in clinic cars, 5,364 more patients than the previous year • 2016-2017: On-road Clinical Staff 3,813; Operation Support and Managerial Staff 342.3; Other Managerial, Professional and Administrative Staff 375.3 TOTAL 4,531.0 • MICA Paramedics: Staffing Numbers 2016-2017 MICA Full-Time Equivalent staff 549.4 MICA Full-Time Equivalent trainees 38.5 TOTAL 587.9 • 310 Community Emergency Response Team volunteers (CERTs), 799 casual Ambulance Community Officers (ACOs) who also provide emergency response	• Mental Health and Well-being Strategy and deepened our partnership with *Beyondblue* with the launch of the Mental Health Matters @ AV training program, which has now been rolled out to all operational and corporate staff • Implement a supportive family violence policy for Ambulance Victoria staff and volunteers, including introducing family violence leave for all staff • AV has developed a Child Safe Policy and Domestic and Family Violence. Policy to reflect the organisation's commitment to child safety. Included in the Domestic and Family Violence Policy are provisions for special leave offered for AV employees who experience domestic violence • Focus on primary prevention, including suicide prevention activities, and aim to impact on large numbers of people in the places where they spend their time adopting a place-based, whole-of-population approach to tackle the multiple risk factors of poor health • Drive improvements to Victoria's mental health system through focus and engagement in activity delivering on the 10 Year Plan for Mental Health and active input into consultations on the Design,	• Reforms to the Clinical Response Model • Reaching an additional 7,000 priority patients within our 15-minute timeframe on an annualised basis • 50,000 people who previously received an emergency ambulance are now being safely referred to care which is more appropriate to the urgency of their individual case	2016-2017 launched the Ambulance Victoria Health and Safety Strategy and the award-winning Ambulance Victoria Mental Health and Well-being Strategy that guides important work to keep our people safe, healthy, and well for work and life: • Lifters (stretchers) • Body cameras to track occupation violence • Consumer and Community Engagement Plan • Flexible leave policies, increased part-time and flexible work options, looked at the options to improve access to childcare, and commenced work on a Diversity and Inclusion Strategy to ensure that our workplace is a safe environment for employees of diverse backgrounds • Improved treatment of agitated patients using ketamine • Added a dedicated mental health nurse, initiated a Telehealth pilot to refer suitable patients to a GP advice line, and added dozens of rural GPs as alternative service providers for callers • People and Culture Committee

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		Service, and Infrastructure Plan for Victoria's Clinical mental health system • 10-year Mental Health Plan, AV has embedded mental health nurses into the Referral Service to assist with identification of additional alternative service providers and to improve care pathways for patients with mental health needs • Bruce's (peer support dog) job is to visit paramedics and staff as part of a six-month peer support pilot program to improve and strengthen the mental health and well-being of our workforce • The retired and former employees peer support program		• Ensure that an anti-bullying and harassment policy exists and includes the identification of: • Appropriate behaviour, internal, and external support mechanisms for staff and a clear process for • Reporting, investigation, feedback, consequences, and appeal, and the policy specifies a regular review schedule
St. John Ambulance Western Australia[155]	• 592,079 calls (3% increase from last year) • St John responded to 653,776 patient cases in 2017/18 across our ambulance, GP, and Urgent Care services • Delivered first aid training to more than 403,000 Western Australians and 308,568 Western Australians received first aid training from our charitable first aid programs • Employed 1,578 full-time equivalent paid staff • 8,489 volunteers contributed 4 million hours	• St John's Well-being and Support Service is deeply committed to supporting the psychological well-being of all St John staff, volunteers, and family members. Our goal is to move through the stigma surrounding mental health, which can often prevent individuals from seeking support • Build resilience in all individuals through evidence-based awareness and skills to address this stigma, and to help our people to support themselves and each other in an informed way and provide education and support via these three levels of support:		

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	• The State Operations Centre provided telephone assistance to more than 592,000 individuals during 2017/18 • St John serviced more than 4,000 events across the metropolitan area caring for 29,476 people • The RAC Rescue Helicopter service performed 790 patient retrievals	▪ Mental health literacy to cultivate a culture of support (annual face-to-face education) ▪ Contact with Well-being and Support services (24/7 phone support) ▪ Professional psychological services utilising external providers • 2018 finalisation of the external Expert Advisory Group (EAG) as well as establishment of an ongoing EAG, to guide the organisation in the unique psychological needs of our workforce and provide evidence-based guidance in our well-being and mental health education • St John understands the importance of research and evaluation, and partnerships with both *Beyondblue* and Curtin University are crucial to the continuing high standard of well-being services we are able to provide		
Paramedics Australasia 2019 Media Kit[156]	4,600 members across Australia and New Zealand consisting of practicing, graduate, retired and student paramedics, and Fellows (volunteers can be members)	No information provided.		